FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

OCTOBER · 1958

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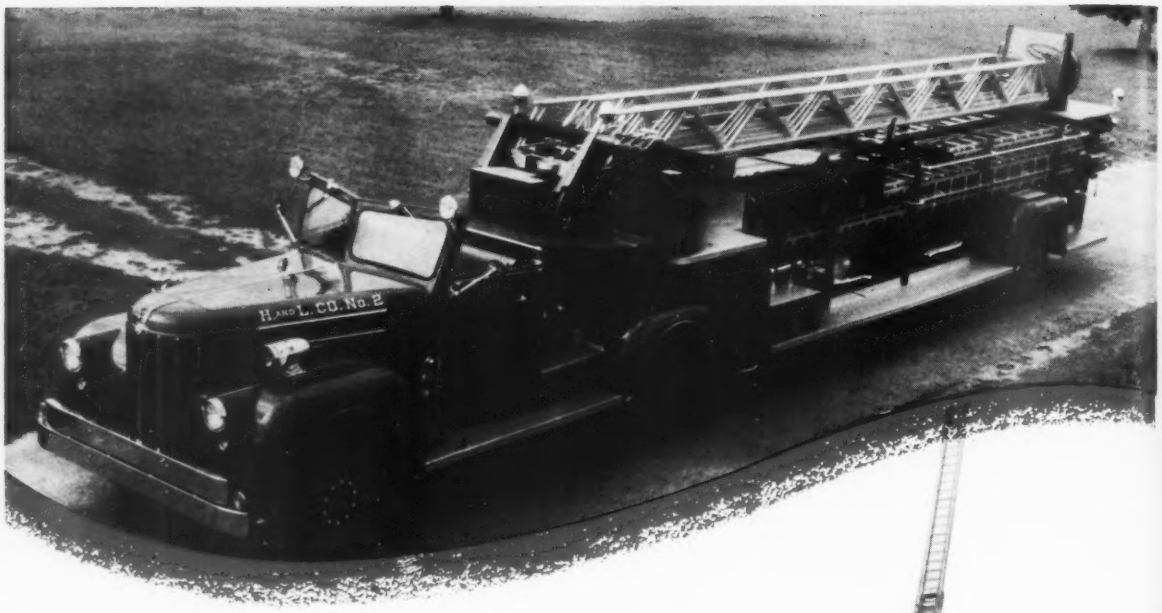
FIREMEN work in cramped quarters 400 feet above New York's Central Park at Hampshire House fire —DAILY NEWS PHOTO

IAFC Conference Report

Emergency Caused by LP Gas in Water Mains

Properties of Laminated Wood Ladders



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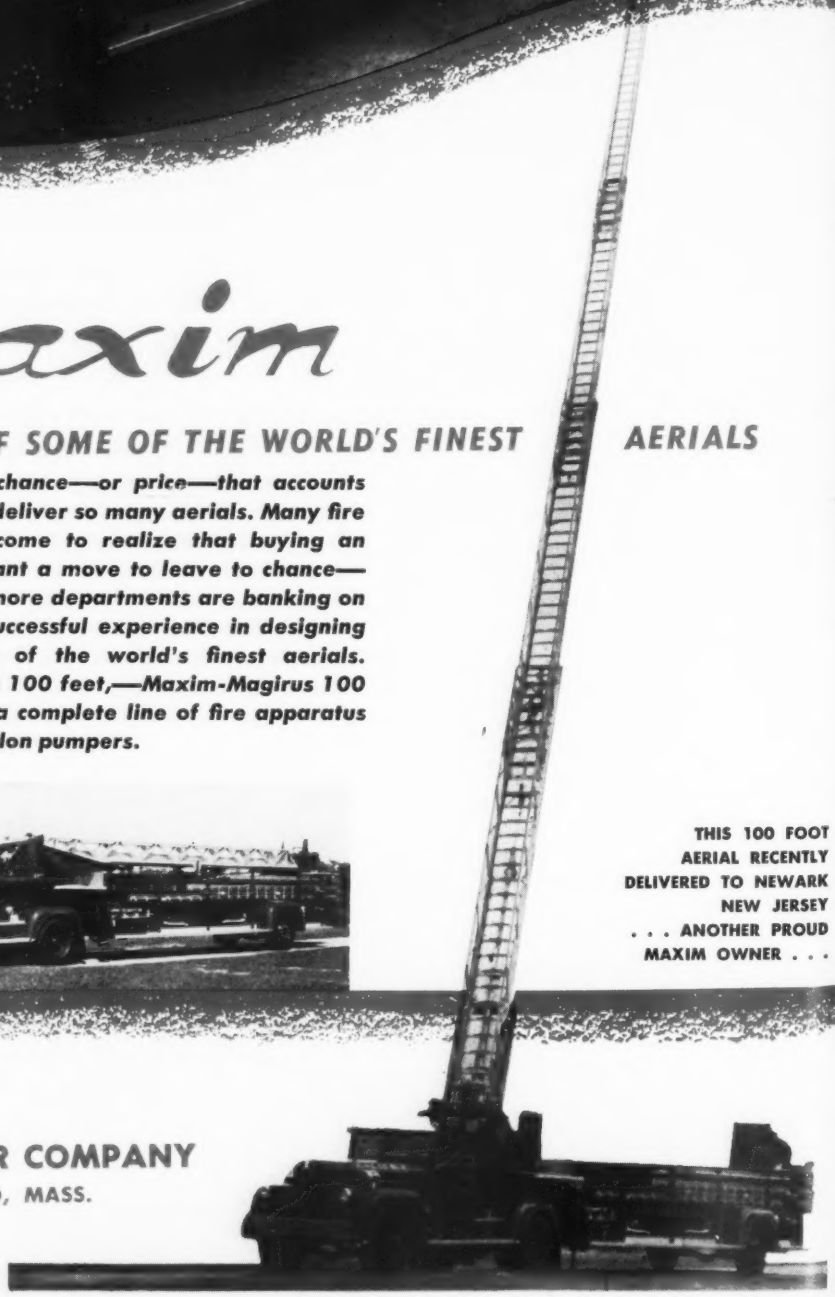
BUILDERS OF SOME OF THE WORLD'S FINEST AERIALS

It is definitely not chance—or price—that accounts for the fact that we deliver so many aerials. Many fire departments have come to realize that buying an aerial is too important a move to leave to chance—or price. More and more departments are banking on our long years of successful experience in designing and building some of the world's finest aerials. Maxim aerials 65 to 100 feet,—Maxim-Magirus 100 to 175 feet,—plus a complete line of fire apparatus and 500 to 1500 gallon pumpers.

THIS 100 FOOT AERIAL RECENTLY DELIVERED TO NEWARK NEW JERSEY . . . ANOTHER PROUD MAXIM OWNER . . .



MAXIM MOTOR COMPANY
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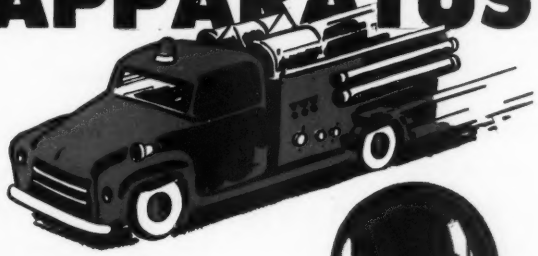
EXTRA HORSEPOWER

"Romance of Firefighting" by Holzman. Harper & Bros. Publishers

for your FIRE APPARATUS



FEDERAL'S Super Beacon Ray light and Model 'Q' siren will get you "over the road" and through traffic faster and safer than extra horsepower! Adding these two Super Signals is better than adding horsepower because they add "protection". A warning "out front", clearing traffic, will get you there quicker and safer than higher speed!

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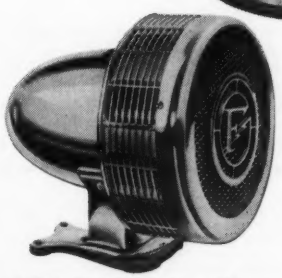

write for catalog #300!

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SIGN and SIGNAL Corporation

FIRE ENGINEERING

VOL. 111 OCTOBER, 1958 NO. 10

IN THIS ISSUE

The Fire Service Moves Toward Professional Recognition—An Editorial 921
By Don O'Brien

First Los Angeles IAFC Conference Stresses Scientific Progress 922

Propane Gas in Water Mains Results in Six Explosions and Fires 927

New Orleans Tests Pumping Procedures on Mississippi River Bridge 928

Some Properties of Laminated Wood Ladders 930

Fire in the Sky 932

Esso Trains Industrial and Municipal Fire Fighters 933

Fireworks Warehouse Blasts Wide Residential Area 934

Township Volunteers Have Unique Training Center 935
By Edward V. McNeill

DEPARTMENTS

Short Cuts and Gadgets 937
False Alarms 938
Manufacturers' News 940
Questions and Answers 944
What's Burning 946
World-Wide Fire News 949
Among the Buffs 951
Our Readers Write Us 958
The Round Table 962
Watch Desk 968

A Scientific Revolution

Delegates seated in the beautiful Shrine Auditorium during the recently concluded 85th Annual Conference of the International Association of Fire Chiefs were forcibly impressed by several speakers who set the theme of the meeting. These men told of advances in chemistry and physics, astrophysics and electronics which were so astounding as to border on the incredible to the average listener.

In this age of scientific breakthrough, unbelievable discoveries, and unique applications of new and old theories, it is apparent that the fire service must stay abreast of the times regardless of custom or inertia. The pace of our existence has been so accelerated by modern science that the keynote speaker characterized the problem of keeping up with each day's new developments as a mad race to merely stand still.

We agree that it requires greater effort to keep up with all of the daily happenings in this changing world. And we pledge every effort to keep the fire service informed of all the changes which directly or indirectly affect fire prevention or suppression.

The world is at present in the midst of a scientific revolution whose effect and impact will eventually be more wondrous than the industrial revolution which occurred at the turn of the century.

As each discovery, each breakthrough, each new application is made you will find it in these pages. This is not a new service but rather a continuation of a policy which FIRE ENGINEERING has followed during the 81 years it has served its readers.

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Fabric FIRE HOSE

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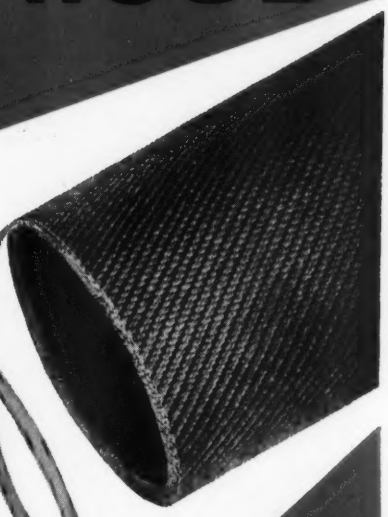

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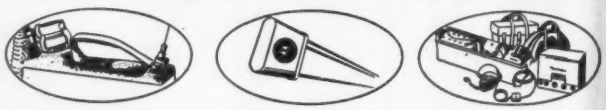
much greater operating range . . . now you can have the greatly extended coverage and clearer messages you've always wanted. These new HANDIE-TALKIE portable radiophones are by far the *most powerful* portables ever built!

much smaller, much lighter . . . new circuits, transistors and subminiature components make them as much as 50% smaller and lighter—truly *portable* and easy to handle for hours without fatigue. The dry battery pack model weighs only an ounce over 7½ lbs.

much lower operating cost . . . dry battery replacement costs have been cut as much as 67%! With adaptor, rechargeable wet cell models can be operated from a car's 6 or 12 volt battery to conserve portable's battery. For semi-permanent installation, a 117VAC power pack is available. All power packs quickly snap in place, making changing easy.

AVAILABLE IN CHOICE OF 43 DIVERSIFIED MODELS



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B.F.Goodrich

Now they squeeze hundreds of extra feet of hose on truck

THAT B.F.Goodrich hose on the right coils tighter than the ordinary hose shown with it because it's lighter, much more flexible. Hundreds of extra feet of hose can be racked on the truck—up to a third more on a standard truck. Firemen like it because it racks naturally on the truck bed, saves loading time after a fire.

The flexibility and lightness of this hose comes from the Dacron chemically-produced fiber used as "filler" cords which go around the hose and carry the load under pressure. These cords are thinner, yet stronger than cords used for reinforcement on heavier, bulkier hose. It is tested to 600 pounds pressure and can stand up to twice as much pressure without bursting.

For areas where excess moisture is a problem, B.F.Goodrich has developed the exclusive Superseal protection for hose that makes it 10 times more resistant to mildew attack and rotting. Most treatments just coat the surface of the hose, but Superseal penetrates every cord of the inner and outer jacket, preparing the hose for all kinds of weather. Superseal protection costs no more than ordinary hose treatments.

When you want a hose that's light, flexible, and will last longer than any other hose made, get B.F.Goodrich hose with Superseal protection. Your B.F.Goodrich fire hose distributor can tell you more about it, or write *B.F.Goodrich Industrial Products Company, Dept. M-406, Akron 18, Ohio.*

B.F.Goodrich ***industrial products***

TRIPLE ACTION HPF* for Fi

*John BEAN HIGH PRESSURE FOG the original high pressure (850 psi) fog system

John Bean's High Pressure Fog system is proven and distinguished from all other fire fighting methods. Microscopic fog particles, created by the original John Bean High Pressure Fog Pump (operating at 850 psi), are discharged through the patented No. 29 Fire Fighter Fog Gun. When driven at high velocity to the base of a fire, these fog particles have many times the surface area and heat absorption power of a solid stream of water. So much so that . . . **one gallon of water as high pressure fog has the fire killing capacity of ten or more gallons discharged in a conventional stream.** You can extinguish more than 95% of your fires faster . . . use only 10% or less of the water usually required . . . and do it with greater safety and with little or no water damage.

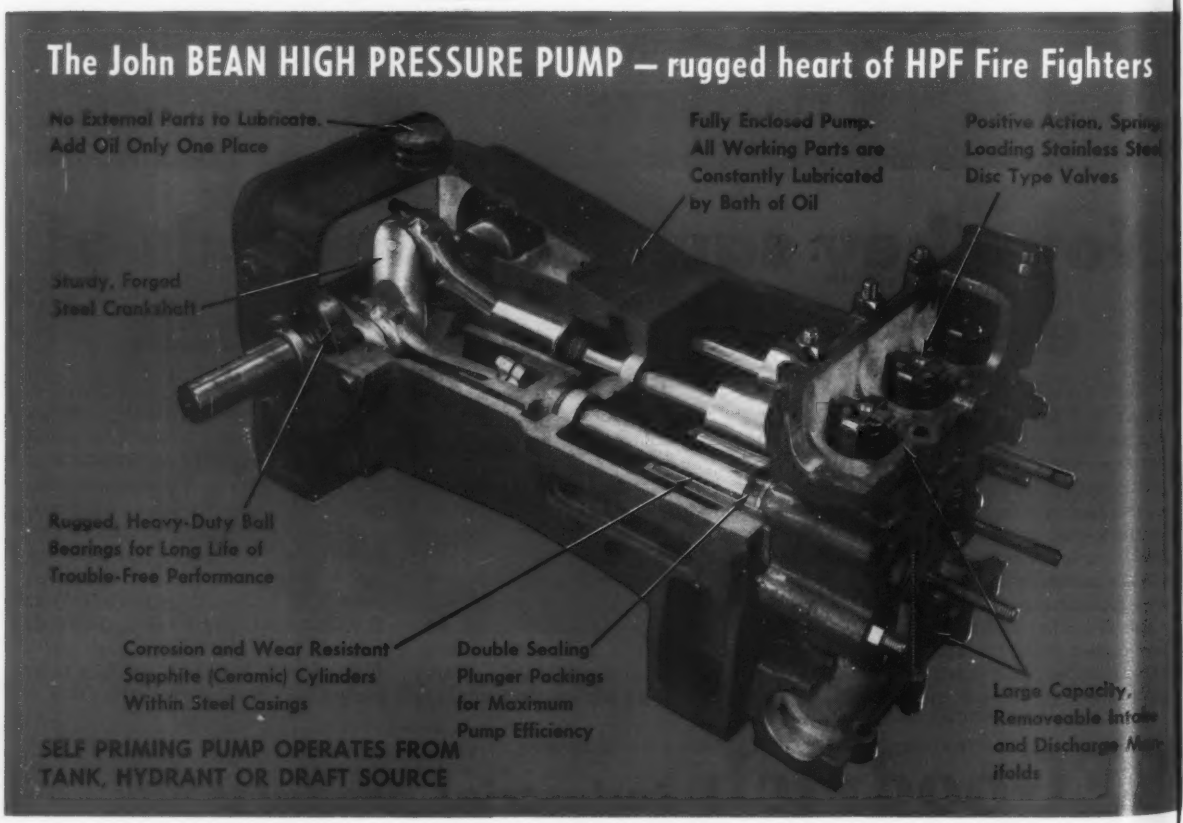
HPF's 3-WAY ACTION KILLS FIRES FASTER BECAUSE

1. IT COOLS – As it contacts a fire, John Bean High Pressure Fog instantaneously absorbs heat at the the rate of approximately 280,000 BTU per gun, per minute.

2. IT SMOTHERS – By shutting off oxygen from the fire. As the super fine fog particles absorb heat, they expand 1700 times to form a smothering blanket that displaces the combustion-supporting oxygen.

3. IT ISOLATES – By throwing a barrier of "cold steam" between the burning gases and their source of fuel.

The John BEAN HIGH PRESSURE PUMP – rugged heart of HPF Fire Fighters


No External Parts to Lubricate. Add Oil Only One Place
Fully Enclosed Pump. All Working Parts are Constantly Lubricated by Bath of Oil
Positive Action, Spring Loading Stainless Steel Disc Type Valves
Sturdy, Forged Steel Crankshaft
Rugged, Heavy-Duty Ball Bearings for Long Life of Trouble-Free Performance
Corrosion and Wear Resistant Sapphite (Ceramic) Cylinders Within Steel Casings
Double Sealing Plunger Packings for Maximum Pump Efficiency
Large Capacity, Removeable Intake and Discharge Manifolds

SELF PRIMING PUMP OPERATES FROM TANK, HYDRANT OR DRAFT SOURCE

Fire Fighting with a 3-WAY PUNCH

STANDARDIZED FOR ECONOMY—John BEAN HPF Fire Fighters mount on most standard truck chassis

ONLY HPF FIRE FIGHTERS GIVE YOU ALL THESE FEATURES

Enclosed Heated Reel Compartments

Removable enclosures winterize the two reel compartments. These, as well as pump, valves, gauges and controls, are warmed by engine heat.

400 Feet of High-Pressure Hose

The 200 feet of special, 5000 psi discharge hose on each reel can be easily handled by one man.

20 Feet of Suction Hose

Standard equipment includes two 10-foot lengths or 2½ inch hard suction hose, complete with suction strainer.

Power Rewind Hose Reels (Optional Equipment)

For faster, easier hose pick-ups, both high pressure hose reels may be equipped with powered rewind mechanisms. Hose reels with hand cranks are standard equipment.

Lighted Control Panel

All gauges, valves and controls are centralized for instant operation—illuminated for safety and easy reading at night.

500-Gallon Six-Compartment Tank

Smooth cornering, starts and stops assured by six-compartment tank with low center of gravity. Prevents undesirable water surge.

Power Take-Off For In-Motion Pumping

Pump is coupled to engine so that pump can be operated for fighting grass, brush and forest fires, while truck is moving. Control for engaging pump is located conveniently in the cab.

Over 45 Cubic Feet of Weatherproof Storage Space

Four large capacity, lighted compartments are built in for proper storage of accessory equipment. Easy opening flush-type door latches.

When minutes count . . .
and you need instant action
. . . or when water's scarce . . .
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Original ***HIGH PRESSURE FOG***

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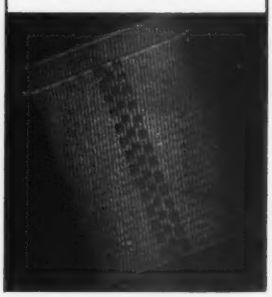
50 FT. ORDINARY COTTON JACKET 2½ INCH

50 FT. AMERICAN COTTON-SYNTHETIC 2½ INCH
18% LESS WEIGHT
27% LESS BULK
50% STRONGER



Try this great new hose. See for yourself how its long-lived cotton-synthetic jacket and laminated natural rubber lining make for easy handling, while saving space and weight. Here's the story —

EASIER TO HANDLE—50′ of this AMERICAN Cotton-Synthetic Hose weighs 18% less than 50′ of average cotton jacket hose . . . enables firemen to move more hose faster. Also lies flatter, coils better, stays flexible wet or dry.

SAVES SPACE—AMERICAN Cotton-Synthetic enables you to carry at least 25% more hose.

STRONGER—High strength-to-weight ratio remains same wet or dry . . . tests prove it 50% stronger than regular hose.

Why lug heavy, bulky, hard-to-handle hose?
Order AMERICAN Cotton-Synthetic Jacket Hose—available in 400 and 600-lb. test—from your dealer NOW. . . or write us for details.

THE *American* RUBBER MANUFACTURING CO.

AR-26

MAKE SURE; Look for Identifying Stripe and Test Report

AMERICAN Cotton-Synthetic Jacket Hose has red, white, and blue identifying stripe. Each 50′ length is factory proof tested with couplings on, for strength, stretch, and twist. Test report accompanies hose.

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New M-S-A Model "S" All-Service Gas Masks now employ three of the most modern scientific safeguards for general respiratory protection. The brief captions tell how these new features work to provide built-in safety factors and help avoid the expense of *premature* canister replacement. You'll find them profitable reading.

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SAFETY EQUIPMENT HEADQUARTERS

NEW

NEW External Check Valve prevents moist exhaled air from entering the canister. Seals out moisture when mask is in storage. Closes automatically after inhalation. Threads at both ends permit easy, positive connection between canister and breathing tube.

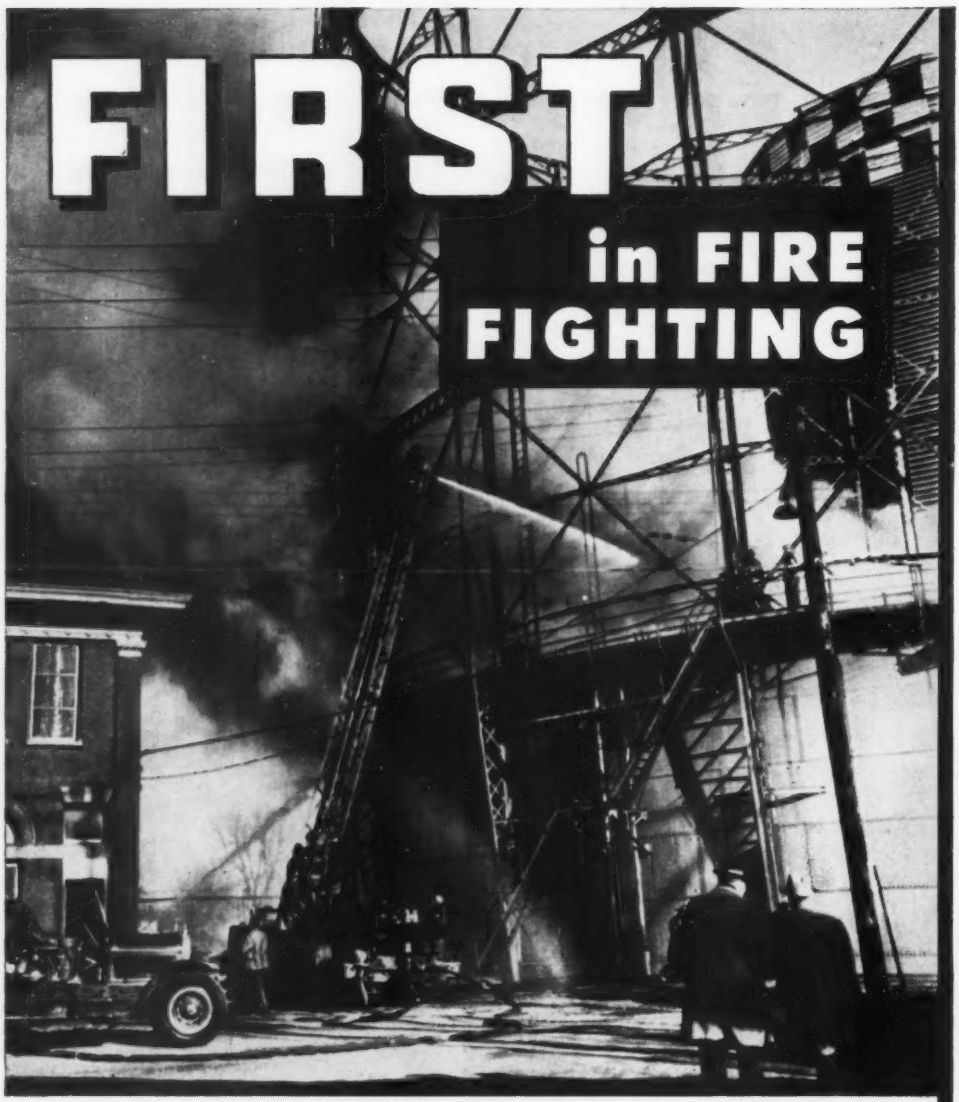
M-S-A® ALL-SERVICE Model "S"
WINDOW-CATOR® CANISTER
UNIVERSAL GAS MASK CANISTER
BUREAU OF MINES APPROVED
See Approval Label On Reverse Side
This INDICATOR section changes color
R
Cat. N. CA-81225
U. S. Patents 2,337,
1. THIS WINDOW INDICATOR APPLIES
TECTION AFFORDED AGAINST CARBON MO
2. DISCARD CANISTER when color of any
CATOR SECTION approaches the color of
SECTION. Never use canister when INDICATOR SECTION is pink or less blue than REFERENCE SECTION.
IMPORTANT INFORMATION—READ CAREFULLY
Comparison of the colors of the INDICATOR and REFERENCE sections should be made, when practicable, in daylight or under daylight-type lamps. Light from incandescent light bulbs and battery-operated cap lamps accentuates the blue color of the INDICATOR section. Canisters observed under these lighting conditions should be discarded when the color of the INDICATOR section is still somewhat bluer than that of the REFERENCE section.
This Side of Canister Should Face Outward
Discarded—
Minutes
Remarks
APPLIANCES CO.
Pittsburgh 8, Pa.
NEW
NEW

NEW Plastic-coated Tape Seal can be removed quickly and easily when mask goes into service. Can be replaced repeatedly in bottom of canister when mask is in storage. Helps preserve the canister when not in use.

NEW Window-Cator Canister is approved by U.S. Bureau of Mines. Contains a window with two color panels which tell you when the canister is or is not effective against carbon monoxide. This enables you to eliminate the timer and avoid premature canister replacement.

New Model "S" All-Service Gas Mask, complete with Window-Cator Canister, External Check Valve and M-S-A Cleartone Speaking Diaphragm gives fire-fighters an extra measure of confidence in emergencies. Extra large lenses assure unobscured vision.

FIRST in FIRE FIGHTING



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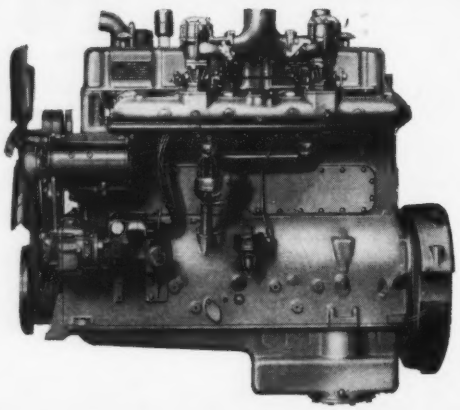
Model 145-GZB—300 hp range High-Output Fire Fighter— Six cylinders, 5⅜-in. bore x 6-in. stroke, 817 cu. in. displ., with counterbalanced and vibration dampened 3½-in. 7-bearing crankshaft; dual downdraft carburetion; dual ignition; precision extra high capacity bearings; removable wet type cylinder sleeves, aluminum pistons, overhead valves with Stellite-faced exhaust valves and seats. Arranged for full electrical equipment and all modern accessories. Get Bulletin 1662.



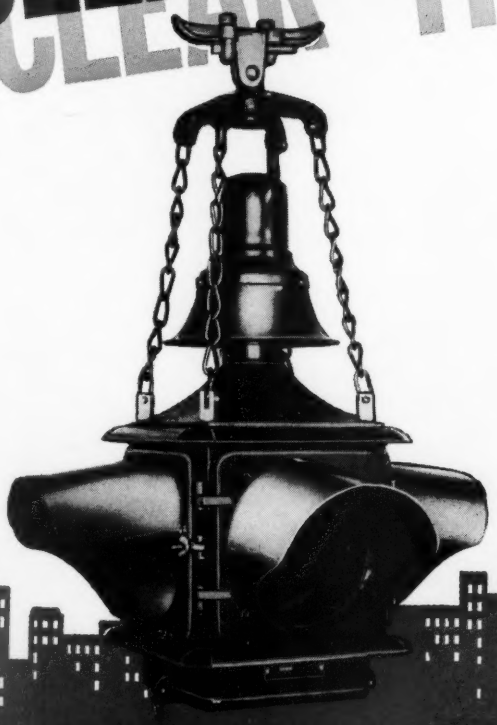
390 *Waukesha Motor Company, Waukesha, Wis., New York, Tulsa, Los Angeles*

WAUKESHA FIRE FIGHTER ENGINES

CLEAR THE LANE

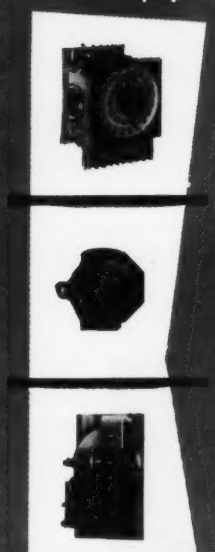
say it twice with this EAGLE

BEACON SIREN



Drivers see the flashing light over the noise of traffic and car radios, hear the siren warning though vision may be obscured. This double-warning, double-safety unit may be suspended at fire lane intersections, or mounted on mast arm or post top. Non adjustable beacon-siren like that shown may have flasher mounted internally.

Directionally adjustable units also available, for post top mounting only. For complete details on Eagle Beacon-Siren units and related equipment send coupon today.



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Controls beacon-siren "on" interval. Adjusts from 2 seconds to 20 minutes.

PUSH BUTTON SWITCH
Weatherproof, actuates Time Limit Switch shown above.

TWO-CIRCUIT FLASHER SET
One circuit at sixty flashes per minute operates the flashing beacon. The other circuit operates at 30 "wails" per minute.

EAGLE

EAGLE SIGNAL CORPORATION
Municipal Division Moline, Illinois
Eagle equipment saves lives . . . saves time

MAIL COUPON TODAY

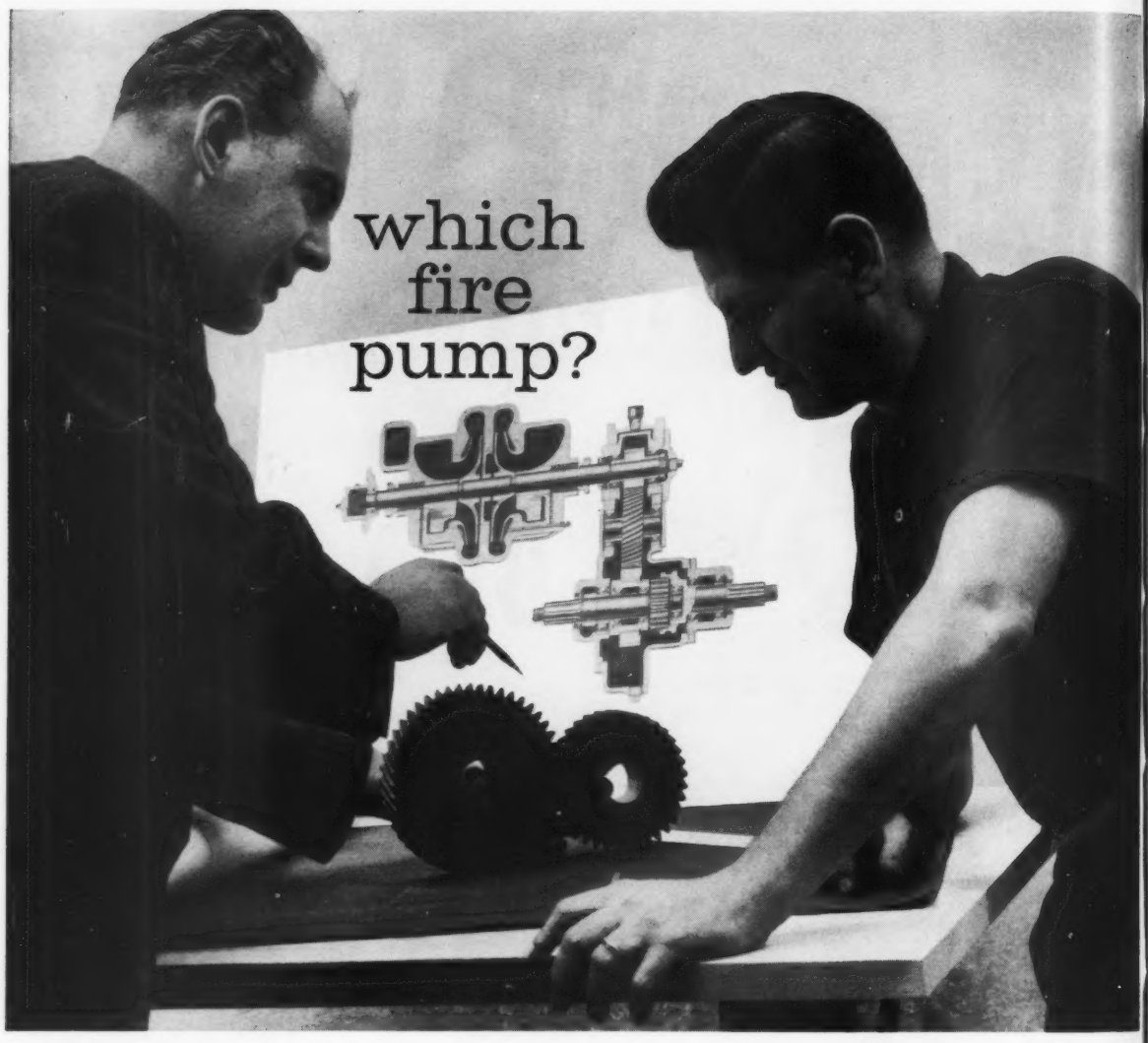
EAGLE SIGNAL CORPORATION, Municipal Division, Dept. FE-1058, Moline, Illinois

Please send complete information on Eagle's new emergency traffic control system.

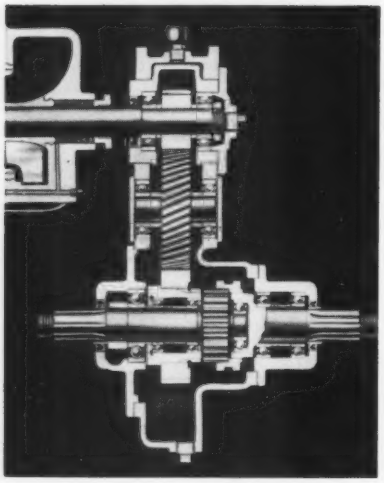
NAME AND TITLE _____

MUNICIPALITY _____

FULL ADDRESS _____



He chose the pump with extra-long life... the
WATEROUS *Electro-Matic** with the *helical gear train*



The helical gear train in the new WATEROUS Electro-Matic gives many extra years of life. Helical gears mean smooth, quiet operation. Gears are in constant mesh and each gear is securely mounted on ball-bearings. There are no sliding gears mounted on spline shafts to vibrate. Gears are hardened and ground. And, of course, all bearings are located outside of the pump chamber and are run in oil.

WATEROUS gears are *crown shaved* to assure that mating teeth contact at their centers. This eliminates possibility of tooth failure due to "end loading" as occurs in ordinary gears.

Illustration shows but one of the many reasons for WATEROUS dependability.

Send for catalog which gives complete information on Electro-Matic controls, high quality design, ease of maintenance, and over-all dependability.

WATEROUS
80 E. Fillmore Ave., St. Paul, Minnesota, Dept. 307

Electro-Matic
*Registration applied for.

Teamed

for your complete fire protection!

These famous brands star on the same team—a single consolidated organization which offers the industry's most complete line of fire protection products and services. Representatives of these brands can help you guard against every fire hazard. Beat fire at its own game with this team's dependable equipment, application experience and professional services!

This high-quality, competitively-priced equipment includes approved fire extinguishers; automatic sprinkler systems; carbon dioxide, dry chemical and foam systems; fire hose, nozzles and couplings; industrial and municipal fire alarm systems; and accessory fire department supplies including ladders, sirens, clothing, breathing apparatus, first aid kits, etc.

Look for these famous brand names, sold through fire equipment specialty firms and leading industrial distributors. Consult the yellow pages of your telephone directory under "Fire Protection Equipment" or write to The Fyr-Fyter Company, Dayton 1, Ohio.

THE FYR-FYTER COMPANY

PACIFIC COAST REGIONAL OFFICE
132-140 Hawthorne St., San Francisco 7, California

CENTRAL STATES REGIONAL OFFICE
221 Crane St., Dayton 2, Ohio

ATLANTIC COAST REGIONAL OFFICE
P.O. Box 750, Newark 1, New Jersey

BRANCHES: Atlanta, Baltimore, Boston, Chicago, Dallas, Dayton, Detroit, Los Angeles, New York, Newark, Philadelphia, Pittsburgh, Portland, Rochester, San Francisco, Seattle, Hamilton (Ontario).

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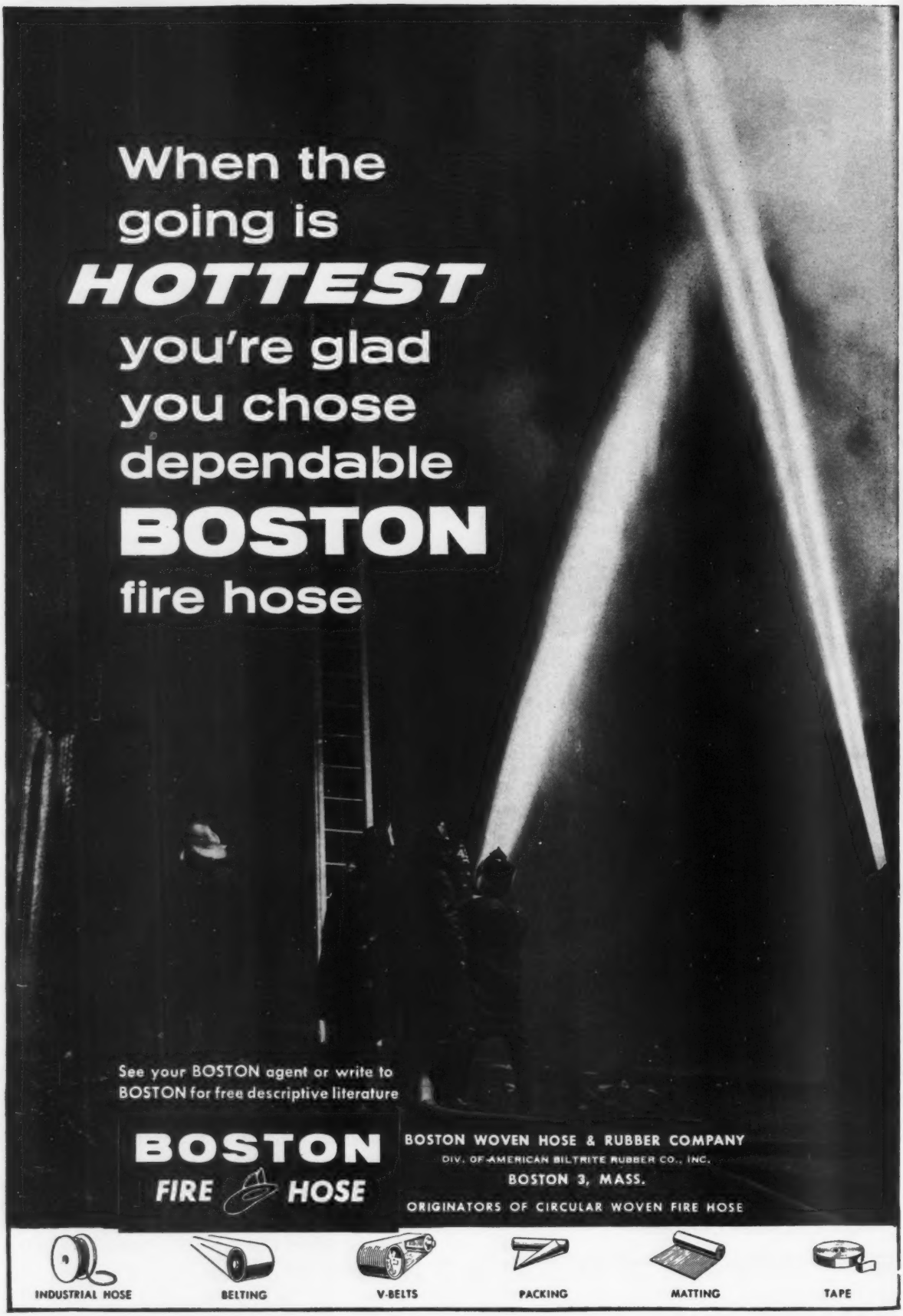

When the
going is
HOTTEST
you're glad
you chose
dependable
BOSTON
fire hose
See your BOSTON agent or write to
BOSTON for free descriptive literature
BOSTON
FIRE HOSE
BOSTON WOVEN HOSE & RUBBER COMPANY
DIV. OF AMERICAN BILTRITE RUBBER CO., INC.
BOSTON 3, MASS.
ORIGINATORS OF CIRCULAR WOVEN FIRE HOSE
INDUSTRIAL HOSE
BELTING
V-BELTS
PACKING
MATTING
TAPE

New 1000-A SERIES

DUO Safety

ALUMINUM FIRE LADDER

with Exclusive DUO-SAFETY
TONGUE and GROOVE CONSTRUCTION

- NO HOOKS or GUIDES to injure hands!
- NO JACK-KNIFING!

Now, Duo-Safety's exclusive tongue and groove arrangement is extended to a great new ladder line... the new 1000-A Series. This outstanding construction design holds the sections together absolutely firmly and rigidly, with no obstructions of any kind!... requires a minimum of banking height ...is more compact with minimum weight. It's the greatest development in fire ladder construction in years and years!

Other Features:

(A) EXTRA STRONG
Light Weight Channel Construction

(B) RUNGS ELECTRICAL WELDED
to Outside Channel

(C) RUNGS INTERNALLY EXPANDED
on Both Sides of Rung Plate

(D) NON-SHEARING RIVE

... and, of course, all non-alumin metal parts are plated for longer, n rusting service.

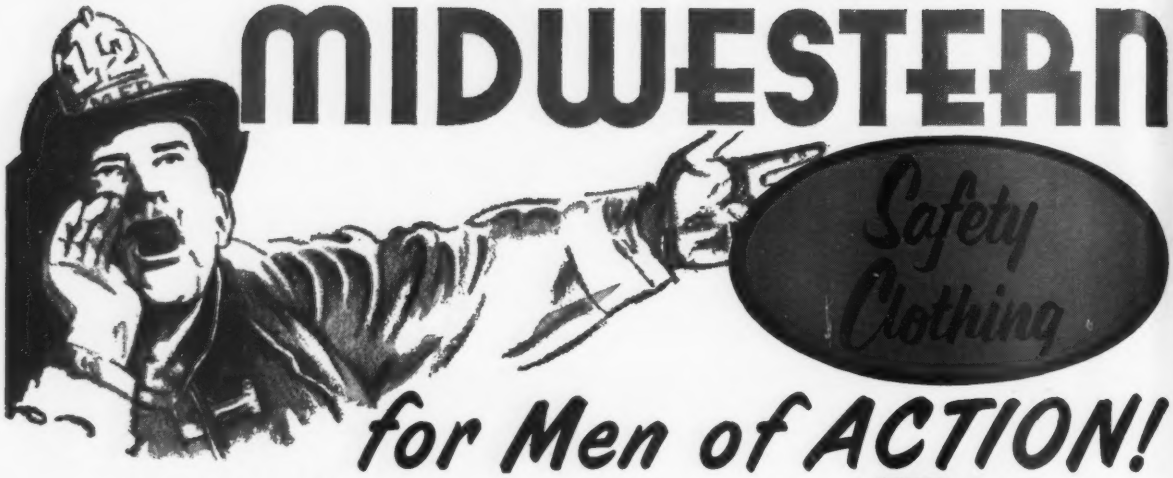
DUO Safety

The 1000-A SERIES Offers Another Choice of an ALUMINUM LADDER for PUMPER USE

Series 1000-A has the identical construction, in lighter weight, as the Duo-Safety 900-A Series, and is a substitute for the famous 700-A Series. This sensational new ladder is available in 2 (Series 1000-A) and 3 (Series 1025-A) section ladders, in lengths up to 30 feet, and expands the Duo-Safety line of aluminum ladders for pumper use to offer a ladder for every requirement.

DUO-SAFETY LADDER CORP. OSHKOSH, WIS., U.S.A.

In Canada: La France Fire Engine and Foamite, Ltd., Toronto



MIDWESTERN

Safety Clothing

for Men of ACTION!

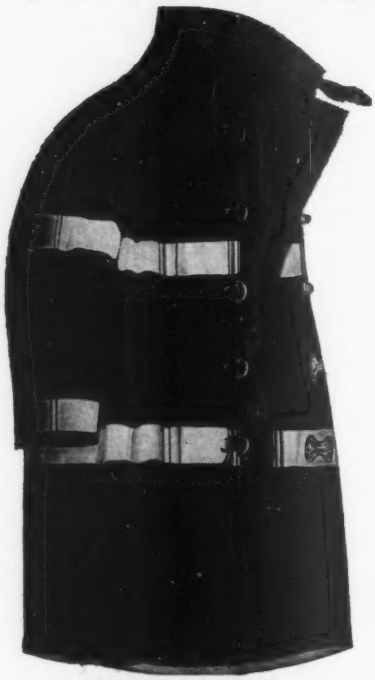
The Original MIDWESTERN

STRIPED SAFETY COAT

Reduces Accidents—Saves Lives

When working under hazardous conditions in smoke, fog, dust and darkness, you deserve the safety protection found *only* in the Midwestern Striped Safety Coat. The highly visible yellow stripes are *rubberized as part of the material* . . . not glued, painted or sewed on. Tests show that Midwestern yellow stripes retain their natural color and have the same durability as the black fabric.

There are many imitations but no substitute for the superior quality, design, fabric texture and outstanding safety features of MIDWESTERN SAFETY CLOTHING FOR FIREMEN!



MIDWESTERN COMBINATION SAFETY SUIT

The Midwestern Rubberized Coat and Bunker Pants combination make it easy for firemen to keep both warm and dry even in the most severe weather. Close fitting collar and elastic inner sleeve keep out sparks and water. Pants have double-stitched seams, reinforcing rivets at points of strain. Both garments available with detachable wool linings.

For complete information on our full line of safety clothing for firemen, see your Midwestern dealer. A letter to the factory will also bring you literature and materials for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois

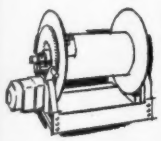
Manufacturers of the Famous **MACKINAW Safety Coats**

on land and on sea

you'll find

ardmore HOSE REELS

the choice for **dependable service**

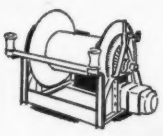


SMOOTH-SEAMED, PERFECTLY ROUND DRUM SURFACE protects hose from damage. Drums and discs made of extra heavy duty gauge steel.

SAFETY GEAR-TO-GEAR DRIVE
Direct gear-to-gear drive. No linkage to cause "play" and extra parts maintenance.

COMBINATION BEARING AND SWING JOINT ASSEMBLY—guarantees perfect reel alignment and pressure-tight lines. Supplied for pressures up to 600 pounds and pressures above 600 pounds.

HOSE ROLLERS AND GUIDES
For high speed hose take off and rewind from any angle. Prevents hose jumping over reel end . . . protects hose from damage.



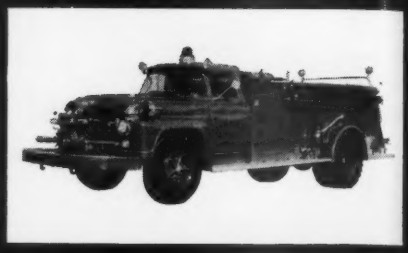
● More and more you'll find Ardmore the choice for dependable service . . . particularly where performance must be certain no matter how severe the service condition. Every Ardmore Hose Reel is a quality piece of equipment, the best that better engineering, materials and manufacturing can provide. A good example of Ardmore engineering is the combination bearing and swing joint assembly that (1) results in superior reel support and alignment and (2) guarantees a pressure-tight connection at this critical point of the reel. Ardmore Reels are supplied in a complete choice of explosion proof, starter motor and hand-wind models. Your inquiry is cordially invited.

WRITE FOR FREE CATALOG
Let us send you our "Ardmore Fire Fighting Reels" catalog...gives complete information.

ARDMORE PRODUCTS
1827 SHERMER ROAD, NORTHBROOK, ILLINOIS

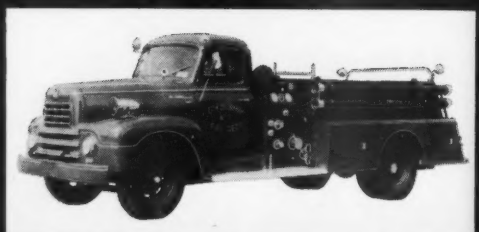
America's Fastest Growing Designers and Manufacturers of Engineered Hose Reels

BOARDMAN



BUILDS

BETTER



PUMPERS

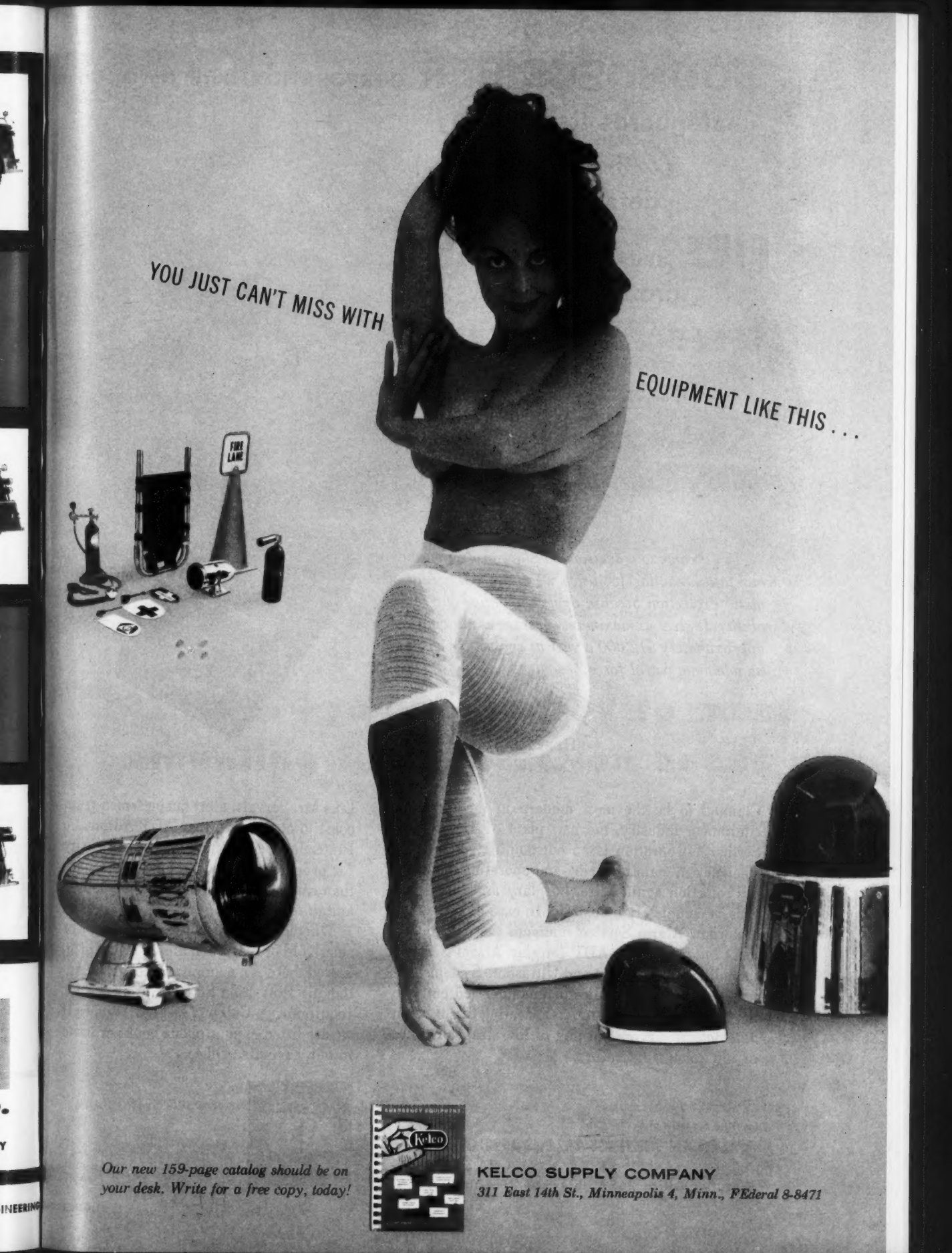
for Less!

THE BEST PUMPER your community can possibly have is the pumper that fits its needs *exactly*. And Boardman pumpers are built to do just that, with the features and equipment you need. They are mounted on the standard chassis of your choice, for quick and inexpensive local service and maintenance! Boardman pumpers are built to your specifications — but for less than a "custom-built" price. WRITE AT ONCE for your copy of the new brochure, "BOARDMAN FIRE FIGHTERS."

BOARDMAN

THE BOARDMAN CO.

OKLAHOMA CITY

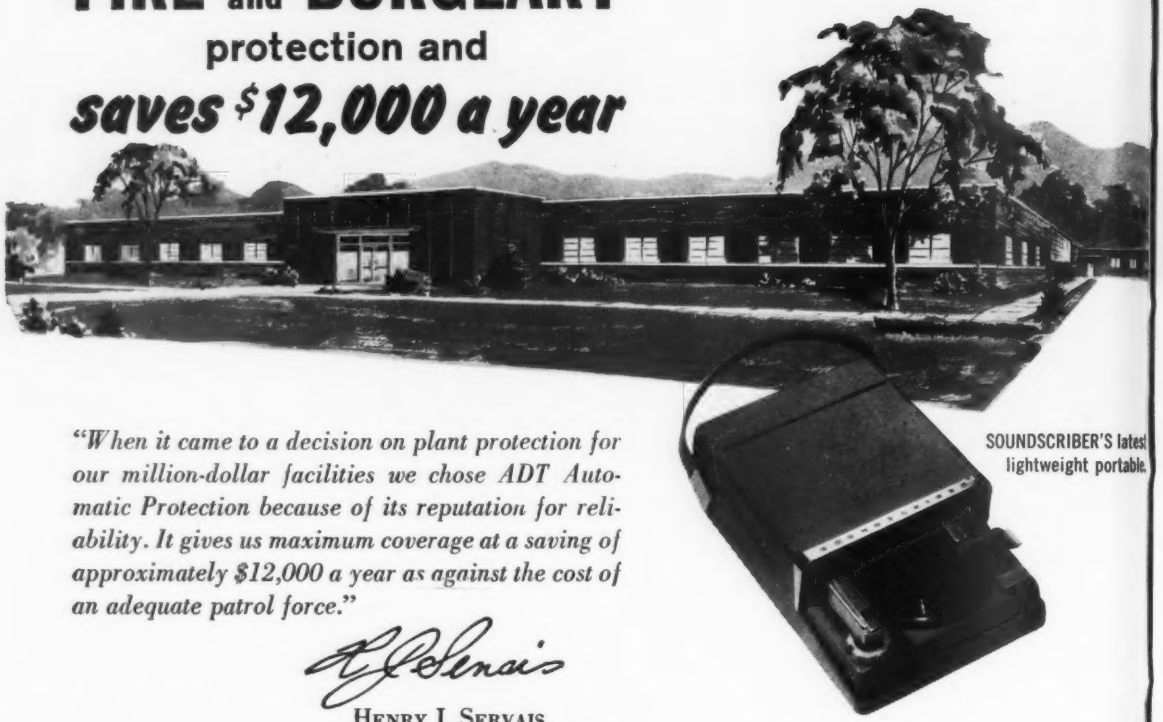

YOU JUST CAN'T MISS WITH
EQUIPMENT LIKE THIS . . .
FIRE LANE
Kelco
Our new 159-page catalog should be on your desk. Write for a free copy, today!
KELCO SUPPLY COMPANY
311 East 14th St., Minneapolis 4, Minn., FEderal 8-8471

THE SOUNDSCRIBER CORPORATION, North Haven, Conn.

safeguards its property *Automatically* gets better

FIRE and BURGLARY

protection and *saves $12,000 a year*



SOUNDSCRIBER'S latest lightweight portable.

"When it came to a decision on plant protection for our million-dollar facilities we chose ADT Automatic Protection because of its reputation for reliability. It gives us maximum coverage at a saving of approximately $12,000 a year as against the cost of an adequate patrol force."

H. J. Servais

HENRY J. SERVAIS
Executive Vice President

Claimed to be the most modern in the dictating equipment industry, the new plant of The Sound-Scriber Corporation is an outstanding example of efficiency in manufacturing and operating methods.

Protection against fire, burglary and other hazards is completely *automatic*. In case of fire, ADT Waterflow Alarm Service summons the fire department *automatically*. ADT Burglar Alarm Service, including Photoelectric and Ultrasonic Systems, *automatically* notifies police of unauthorized entry to the building or the vault. ADT Heating Supervision *automatically* gives warning of low steam pressure or low room temperature.

Like Mr. Servais, alert businessmen from coast to coast know that ADT Automatic Protection Services give greater security for property, profits and employees' jobs than can be obtained by other methods—and *at less expense!*

Whether your premises are large or small, old or new, sprinklered or unsprinklered there is a combination of ADT Automatic Protection Services to meet your requirements. Call our local sales office if we are listed in your phone book; or write to our Executive Office.

Controlled Companies of
AMERICAN DISTRICT TELEGRAPH COMPANY
A NATIONWIDE ORGANIZATION
Executive Office: 155 Sixth Avenue, New York 13, N. Y.

ADT

Mack protects flight propulsion plant. Pratt & Whitney Aircraft appreciates utmost reliability—as only an aircraft power plant manufacturer can! They recently placed this 750 gpm Mack pumper in service at their Florida Research and Development Center at United, in Palm Beach County. Unit features 500-lb. dry powder extinguisher, foam system, and the exclusive Mack four-wheel Balanced Bogie that delivers power equally to the wheels having traction, for off-highway service.

MACKS—your best way to meet mounting fire protection needs

A growing America is an America that's building. Building homes . . . stores . . . plants . . . skyscrapers . . . docks . . . warehouses . . . and hundreds of other facilities that run up the burdens of fire protection.

To meet these mounting needs, fire departments and industries across the country are turning to the proved dependability of Macks—apparatus unrivaled for sure, swift starting, for the ability to swing into immediate action, and for tireless pumping power.

Your Mack representative will be glad to discuss with you the custom-built Mack apparatus that best suits your needs. Cab-forward or conventional type . . . standard or automatic transmissions . . . with the gear ratios and integrated equipment that most exactly correspond to your terrain and climate. Mack Fire Apparatus, Sidney, Ohio. In Canada: Mack Trucks of Canada, Ltd.

MACK
first name for
FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 to 1250 GPM...SQUAD AND HOSE WAGONS...AERIALS 65' to 100'...COMBINATION LADDER TRUCKS

Shielding your plant from fire

. . . through skilled engineering

of AER-O-FOAM systems

Developments in the *engineering* of fire-fighting foam systems have made foam constantly more efficient . . . and economical . . . in control of fire in flammable liquids.

National Foam, time and again, has pioneered these developments. Through improvements in mobile systems, for example, National Foam has substantially reduced installation costs in modern foam systems.

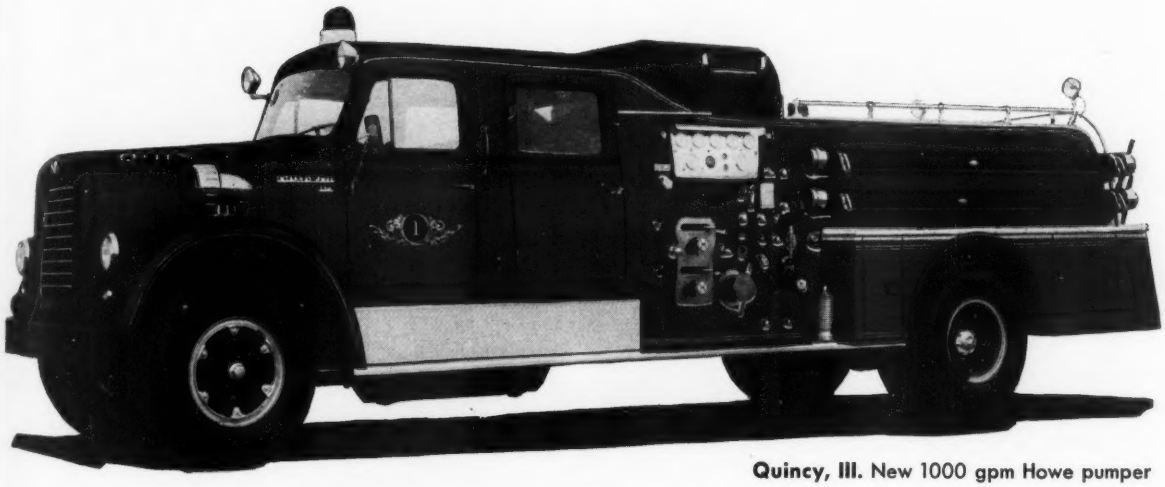
Safety engineers know they will get the benefit of up-to-the-minute system design when they call in the National Foam representative.

New efficiency in control of fire *is planned in this section of National Foam's engineering department.*

NATIONAL FOAM System, Inc.

West Chester, Pa.

HOWE *offers Another Big Advantage*



Quincy, Ill. New 1000 gpm Howe pumper

Large Pumping Capacity on Commercial Chassis

With delivery of a 1000 gallon pumper to Quincy, Ill., and twin 750 gallon pumpers to Jefferson City, Mo., Howe becomes first to supply fire fighting equipment on the new International Harvester 257 HP chassis with V8 engine. Quincy apparatus has the famous Howe dual pumper with 1,000 gpm Waterous Electro-Matic fully power controlled pushbutton operation and a Myers 60 gpm at 800 psi power takeoff pump. Both pumps can be operated simultaneously. The Myers pump can be used while the truck is moving to fight grass fires. Other equipment includes foam system . . . hose reels enclosed in steel housing, fully heated as are both pumps . . . a 300 gallon booster tank . . . 6-man sedan type cab . . . spacious center rear and running board compartments for miscellaneous equipment.

Jefferson City's twin pumpers have 750 gpm Waterous Electro-Matic pumps, complete foam and wet water systems, plus other features incorporated in the Quincy truck. All three pumpers have ball type fingertip control valves that open quickly under any pressure. Large capacity pumpers mounted on commercial chassis like these give the advantage of servicing by local dealers who can obtain spare parts quickly. Many well known chassis are available with engines fully capable of handling 1000 gpm with ample horsepower reserve. Investigate the advantage of having Howe superior equipment on these powerful modern chassis. Before you buy, call Howe!

Jefferson City, Mo. has been supplied these high powered twin 750 gpm pumpers by Howe

HOWE

HOWE

Member FAM
(Fire Apparatus Manufacturers Association)

"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

Dept. FE-108, 1400 W. 22nd St., Anderson, Indiana, U.S.A.

SAFELY!

Equipment made of New Fabric Reflects 90% of Radiant Heat

How fast could you knock out a fire if you could move in really close . . . and stay there? Look at these men—they're in close and holding their ground. They're protected by equipment made of 3M Aluminized Fabric that bounces off intense heat.

An entirely new concept in heat protection is offered by flexible, long-wearing 3M Aluminized Fabric that reflects 90% of radiant heat. And it's 50% lighter than ordinary materials that only insulate against radiant heat.

Complete 3M Aluminized Fabric suits offer protection against 2000° F exposures to permit fire fighting and rescue operations never before possible under such conditions. Crash crews are able to penetrate the intense heat of burning aircraft for rescue work—*proof* of 3M Aluminized Fabric's reflective-protective qualities!

For safety's sake, see—test this amazing new material that is specified by military departments, used by modern city and industrial fire departments and rescue squads.

3M Aluminized Fabric is available in hoods, gloves, coats, full suits and salvage covers. Send coupon for free booklet "When It Takes More Than Courage".

3M BRAND ALUMINIZED FABRIC

Minnesota Mining and Manufacturing Company . . . WHERE RESEARCH IS THE KEY TO TOMORROW

"3M" is a registered trademark of Minnesota Mining and Manufacturing Company, St. Paul 6, Minn. General Export: 99 Park Avenue, New York 16, N.Y. In Canada: P. O. Box 757, London, Ontario.

Minnesota Mining and Manufacturing Co., Bldg. 42-5W, Room 514, St. Paul 6, Minnesota

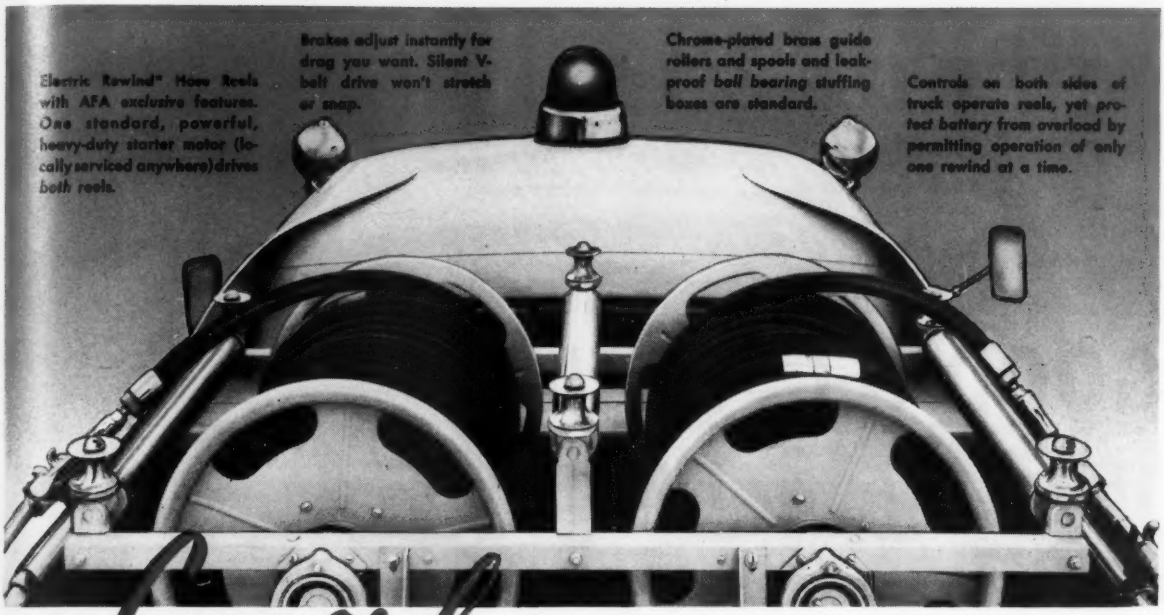
Please send me booklet, "When It Takes More Than Courage".

Name_____ Title_____

Firm or Fire Dept._____

Address_____

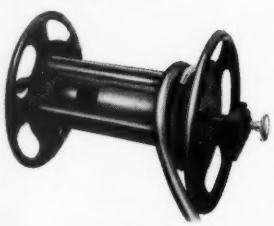
City_____ Zone____ State_____


Electric Rewind* Hose Reels with AFA exclusive features. One standard, powerful, heavy-duty starter motor (locally serviced anywhere) drives both reels.
Brakes adjust instantly for drag you want. Silent V-belt drive won't stretch or snap.
Chrome-plated brass guide rollers and spools and leak-proof ball bearing stuffing boxes are standard.
Controls on both sides of truck operate reels, yet protect battery from overload by permitting operation of only one rewind at a time.

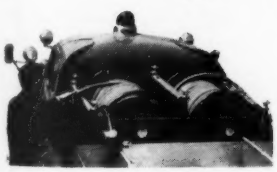
Superb HOSE REEL FEATURES AGAIN PROVE THE ENGINEERING EXCELLENCE OF American Fire Trucks

Two hose reels are supplied as standard equipment on every American Fire Truck

Inset on reel shows superior AFA construction. Collapsible, *self-adjusting* spring steel drum louvers flatten when pressure expands hose. Design prevents damage to hose and couplings—*increases* hose life.



Special *convex* reel wheels with *wide* rolled edges protect hose. Hose comes *straight* from coupling—*not* sharply bent—thus lasts longer. This is AFA *engineered excellence!*



Hand crank rewind* equipment includes top-quality reels, same fine design as other models.

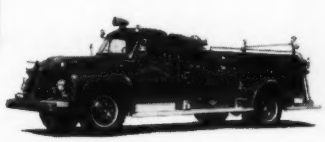
*Optional features at extra cost.

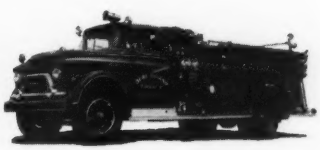
From bumper to rear step, American Fire Trucks are packed with engineered features that firemen like! Examine these fine AFA-built hose reels, for example. See how every detail helps give you faster operation, smoother performance and greater convenience than any other reel built!

As pioneer builders of the first successful electric rewind hose reel, American has continued developing, improving and action-testing to increase the useful benefits these units afford you at any fire.

In line with our policy of offering a choice of chassis, choice of midship or front-mounted pump—and other features to suit *your* community's needs—you can choose these hose reels with electric, hand-crank, or hand-operated rewinds.

Why not get full details?





Contact your nearest American representative soon!

American

AMERICAN FIRE APPARATUS CO.

FIRE APPARATUS CO. "Always Pioneering with Better Engineering"

Main Office: Main Street Road, Battle Creek, Mich.•Plants at: BATTLE CREEK, MICH.•MARSHALLTOWN, IA.•STRATFORD, ONT.

COMPARE IT

For Compactness, Strength and Ease of Handling!

GOODALL "EZ flex"

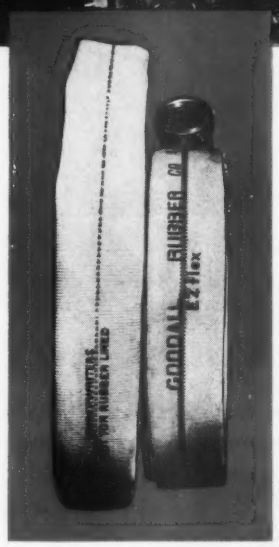
THE *Modern* FIRE HOSE

Stronger! Lighter! Longer Lengths!

Acclaimed as the most important development in fire hose construction in over half a century, "EZflex" is proving its sensational advantages in fire departments throughout the country.

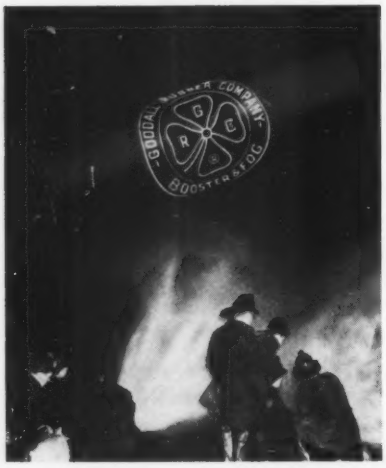
JACKET—A combination of high-tensile fibres of outstanding strength, woven by a special process, assuring highest resistance to pressure, wear, weather and rough handling. Size-for-size, "EZflex" pressure-resistance is equal or superior to the heavier and stiffer conventional cotton jackets, despite its much lighter weight. The tightly woven fabric is virtually snagproof, and is treated to resist mildew.

LINING—A light-weight yet long-wearing reinforced rubber lining, bonded firmly to the surrounding jacket, and having a perfectly smooth waterway to insure a full, fast flow. In combination, the "EZflex" jacket and lining provide a fire hose far ahead of conventional types in strength, flexibility, durability, ease of handling, and economy. "EZflex" is available in continuous lengths of 100 feet, which means fewer couplings. Single Jacket, sizes 1½" to 2½". Double Jacket, sizes 1½" to 3".



COMPARE! A 50 ft. coil of standard Cotton Rubber Lined Fire Hose weighing 21 lbs., and a **100 ft.** coil of "EZflex" Fire Hose weighing only **19 lbs.** What a difference in compactness and ease of handling!

UNDERWRITERS *and* FACTORY MUTUAL APPROVED FM



"LONG-LIFE" HIGH PRESSURE BOOSTER and FOG HOSE

A new Goodall hose built especially for use with fog nozzles to assure utmost strength and safety at working pressures to 800 lbs. Light weight—excellent flexibility—easy to handle in a hurry. Also ideal for booster service. Molded-and-braided construction; maximum lengths of 500 feet; ¾" and 1" I.D. Tough rubber tube; two rayon braid reinforced carcass in both sizes; wear-resistant red rubber cover.

Contact Our Nearest Branch for Details and Prices.

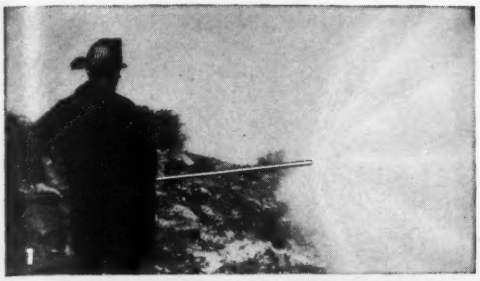
Standard of Quality—Since 1870

HOSE · BELTING · FOOTWEAR · CLOTHING
AND OTHER INDUSTRIAL RUBBER PRODUCTS

GOODALL *Rubber Company*

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

BRANCHES AND DISTRIBUTORS THROUGHOUT THE UNITED STATES.
IN CANADA: GOODALL RUBBER CO. OF CANADA LTD., TORONTO.



Rockwood WET *gets down to the root of problem fires!*

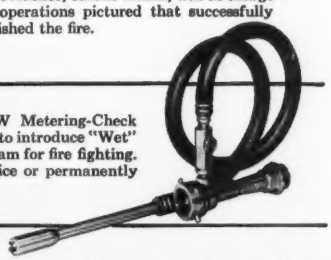
The deep-seated dump or peat fire is a problem faced by many cities and towns. It's an unpleasant, often very expensive problem requiring weeks of work to extinguish. Your town is probably no exception — but you can use exceptional products to extinguish deep-seated fires — the Rockwood Bayonet Piercing Applicator and Rockwood WET. The Rockwood Bayonet Applicator helps you pierce through top layers of debris and get at the heart of the fire. Rockwood WET, a wetting agent, increases the fire extinguishing action of water — making a little water go a long way. And Rockwood WET retains its penetrating action even at high fire temperatures!

With this fire-fighting team you save water, time and *quickly* control smouldering fires.

There are good reasons for you to investigate Rockwood WET and Rockwood Bayonet Applicator. So why not fill in the coupon below and let us send you full information?

Photo strip on left shows (1) Rockwood Bayonet piercing applicator ready for use (2) Rockwood Eductor and Wet feeding wetting agent solution to Bayonet Nozzle (3) Bayonet being inserted at fire location (4) Bayonet partially inserted; note, steam rising from rubble (5) wet water reaches deep seated hot spot causing steam eruption and ground depression (6) Final steam cloud as hot spot is extinguished.

Earl C. Griffith, Chief of Fire Department, of East Providence, Rhode Island, was in charge of the operations pictured that successfully extinguished the fire.



Rockwood's All-Purpose new FW Metering-Check Valve and Eductor was developed to introduce "Wet" or FOAM Liquid into a water stream for fire fighting. It can be used as a portable device or permanently installed on a fire truck.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

Distributors in all principal industrial areas

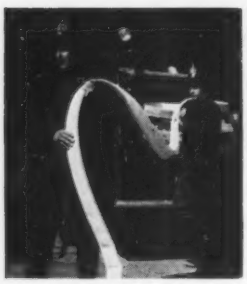
ROCKWOOD SPRINKLER COMPANY
Portable Fire Protection Division
1244 Harlow Street
Worcester 5, Massachusetts

Please send me your illustrated booklet on Rockwood fire-fighting products.

Name ..... *Title* .....
Company .....
Street .....
City ..... *Zone* ..... *State* .....

Lightweight hose made with DACRON® gets into action fast

REG. U. S. PAT. OFF.



Easy handling of hose containing "Dacron" comes from its light weight and flexibility.

Compact—over 1,000 feet of hose containing "Dacron" fits easily into most pumpers.

Hose containing Du Pont "Dacron"* polyester fiber is stronger, yet lighter, than ordinary hose. It is also more flexible and easier to handle. That's why hose made with filler cords of "Dacron" contributes to the high efficiency of today's fire fighters. Hose made with "Dacron" is produced by all fire-hose manufacturers. The next time you buy hose, be sure it's made with "Dacron". E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Department, Wilmington 98, Delaware.

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FIRE HOSE MADE WITH "DACRON" is easier to handle... gives improved performance... packs more compactly.

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NOW...A 2-Way "Belt" Radio ...for constant control at the fire grounds!

Your entire fire-fighting and service personnel can be under continuous control with RCA Personalfone. Worn on the belt, this miniature transistorized battery radio provides instant 2-way communications for rescue squads, ladder companies, hose men and salvage corps in buildings. RCA Personalfone assures the same communications mobility and control that RCA Carfone Radio gives to vehicles.

Personalfone's small, lightweight transmitter and receiver are contained in two leather pouches. Comes equipped with antenna, battery, microphone, speaker or earphone. Combines with RCA Carfone Radio for vehicles, assuring the quality communications of the leader in radio and electronics. Expert service by RCA's own radio technicians.

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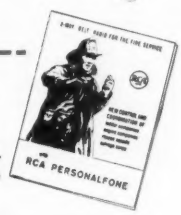
☐ Please send me illustrated brochure about RCA Personalfone "Belt" Radio for 2-Way Communications at the fire grounds.



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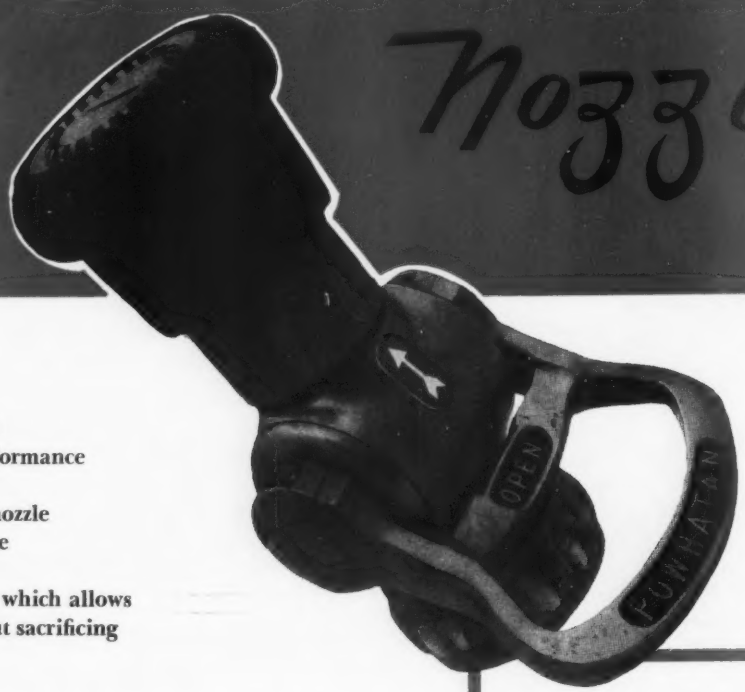
Powhatan's DURA-FOG Nozzle



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CHOICE OF SWIVEL OR SOLID BASE

- Each nozzle sold has a 100% performance test
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- Denser curtain
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TRY IT OUT!

You can—by simply writing us and telling us you want to see and test it. Write today!

OVER A MILLION SHUT-OFFS AND NEVER A LEAK!

Dura-Fog Nozzles have been thoroughly bench tested, to assure dependability. We strived for 250,000 shut-offs, actually tests have gone over a million with no leak!

FLOW IN GPM AT 100 PSI NOZZLE PRESSURE

Size	Straight Stream	30° Fog Pattern	60° Fog Pattern	90° Fog Pattern
1"	20	22	32	35
1½"–60	57	60	72	88
1½"–100	95	100	105	107
2½"	135	165	190	225

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OUR SIXTY-SIXTH YEAR

In The Same Location Since 1892

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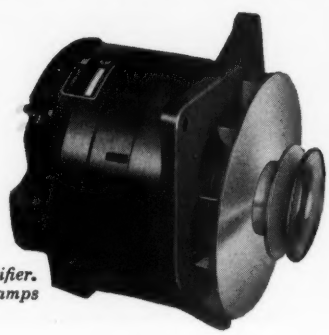
Should your vehicles be equipped with Leece-Neville Alternator-Generators?



L-N Standard Alternator. *Low cost installation with regulator and rectifier. Capacity: 12 volts, 50 amps (higher capacity systems available).*

L-N ALTERNATOR SYSTEMS ARE AVAILABLE AS FACTORY-INSTALLED ORIGINAL EQUIPMENT ON ALMOST ALL NEW VEHICLES.

ANY vehicle with accessories that require heavy electrical output, such as two-way radios, sirens, warning lights . . . any vehicle that performs a heavy task at speeds too slow to permit a "heavy-duty" generator to keep the battery charged . . . or any vehicle making frequent stops with motor idling . . . *definitely needs* a Leece-Neville alternator-generator system! Here's why!

Heavy electrical loads, frequent stops or prolonged idling of vehicles equipped with "heavy-duty" DC generators pull batteries down and wear out other electrical components fast. The result is unnecessary down-time, disrupted schedules, high maintenance expense.

Leece-Neville alternators keep batteries charged at all times, provide adequate output with engine idling, and are unaffected by high-speed operations. Constant voltage level control improves the performance and life of all electrical units on the vehicle. And, best of all, L-N alternators actually cost no more than most "heavy-duty" generators!

QUALITY AUTOMOTIVE ELECTRICAL EQUIPMENT

Leece-Neville

SINCE 1909

For more information, *contact your local L-N Distributor or mail the coupon below:*

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☐ *Send literature on L-N Alternators*
☐ *Have your salesman call on me*

Type of Service _____

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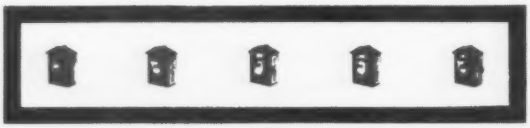
New Control System Reduces Costs Improves Fire Alarm Flexibility

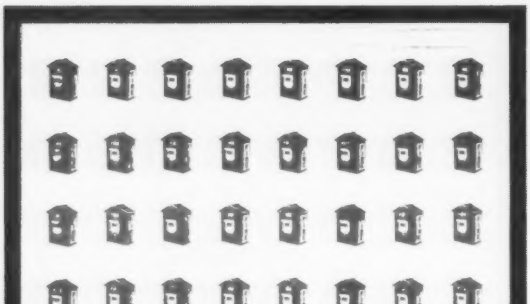
Gamewell Form 4 Unit Gives More Protection per Dollar

At lower cost, but of standard Gamewell high quality, the new Form 4 Control Unit stretches your fire alarm dollar. It enables you to put saved dollars into street boxes to insure wider public use. Compared with earlier models — dollar for dollar — you can buy the new Form 4 and up to 8 times as many boxes for the same overall cost!

5 street boxes with previous control systems



compared with up to 40 boxes with the new Form 4



The new Gamewell Form 4 is ideal for the small community, and for decentralizing big city Fire Alarm Systems.

Floor Space Problem Solved

In only 20% to 30% of the space previously used, you can install this system, including batteries. This "packaged" Fire Alarm Control Cabinet is *complete*, contains all devices needed for a central office setup.

The Gamewell Form 4 is quickly and easily installed, has reserve power for emergencies, is available in any capacity up to 10 circuits.

The Form 4 automatically repeats box alarms and warns if a circuit is broken. Delivery of the unit, which meets NBFU standards, can be made promptly.

Descriptive Bulletin Now Available

Bulletin 3A completely describes the Gamewell Form 4 Control Cabinet and its outstanding features. At no obligation, write today for a copy of Gamewell Bulletin 3A.

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VOL. 111, NO. 10

FIRE ENGINEERING

THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

OCTOBER, 1958

The Fire Service Moves Toward Professional Recognition

Recent events in the field of education have focussed new attention on recognition of fire fighting as a profession. One of these, the organization of a Fire Administration Institute by the International Association of Fire Chiefs, has previously been the subject of comment in these columns but its importance is such that it deserves further attention.

The Institute recently received legal and educational recognition when it was granted a provisional charter by the Regents of the State of New York. The word "provisional" is a condition of the grant in that the Institute is given five years in which to lay its groundwork and begin operations.

The steps which the IAFC has taken since the project was unanimously authorized a year ago at the New Orleans conference, in what is now considered the most important action in the Association's history, has culminated in the charter. Bringing the Institute from its inception to full maturity as a sound educational program is now a challenge to the leadership and administrative ability of the Board of Trustees.

That the trustees intend to face the challenge and discharge this responsibility was evident at their most recent meeting held in Los Angeles prior to this year's IAFC conference. The board discussed plans for publicly presenting the aims and policies of the Institute and for developing curricula. In the latter area, educational consultants have been directed to proceed with the design of a basic program.

In this endeavor, the board will need, and should receive, the wholehearted support and cooperation of every member of the fire service. This is not so much a program to improve the stature of those presently in command positions, but rather a long-range project to raise the standards of the entire fire service. As such, the greatest benefits will eventually accrue to men now in the lower ranks or not yet embarked upon a fire service career.

Support and cooperation from the rank and file will not necessarily be in the form of monetary contributions. More likely it will mean a charitable approach during fire station discussion of efforts to establish a going organization. Nothing seems to destroy the incentive of group effort more effectively than premature criticism which may be based upon misconception and misinformation. Withholding adverse comment until the Board has had sufficient opportunity to announce concrete plans will be of great assistance.

It is expected that the program of the Institute will eventually lead to establishment of a nationwide college degree in fire administration. When this is accomplished, professional recognition for which the fire service has striven many years, will be within reach.

General acceptance by other professional groups will not be automatic. As with any worthwhile attainment, the way to the top is not easy. The obstacles in the path of the Institute and its objectives are many and of a type not normal to the average college or its prospective students.

Financing and curriculum are major problems to the administrators, and continuous attendance appears to be a handicap to the students. Fortunately, there is established precedent in a few areas of the country to help overcome these impediments, so that a sound plan of dealing with them can be worked out.

More fortunately, and by design, the educators named to the Institute's board are closely associated with advanced fire service programs presently in operation. All are comparatively young men, acknowledged leaders in their field of specialized education, and professionally recognized by the foremost authorities. With such an auspicious beginning it is not difficult to foresee that professional recognition for the fire service will result, and be richly deserved.

Llow O'Brien

Former Chief G. R. McAlpine, past president of the IAFC (at extreme left) administers oath of office to new officers (from left to right): Chief Reynold C. Malmquist, Minneapolis, Minn., president; Chief A. H. Lintelman, Baytown, Tex., first vice president; Chief William Taylor, Burbank, Calif., second vice president; Chief G. A. Mitchell, Opelika, Ala., treasurer, and Jay W. Stevens, San Francisco, Calif., executive secretary —*Los Angeles F. D. photo*

First Los Angeles IAFC Conference Stresses Scientific Progress

Heat wave and smog fail to slow pace of 85th annual meeting. Exhibitors continue to shatter records established in previous years

Conference High Points

Total Attendance: 2,018 from 10 countries

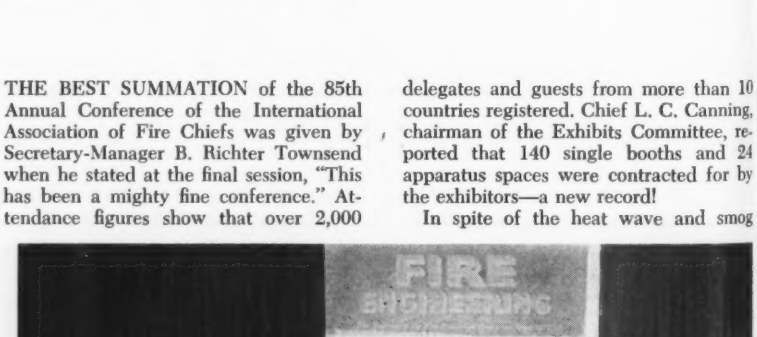
Exhibits: 140 single booths and 24 apparatus spaces

Place of 1958 Conference: Grand Rapids, Mich., August 30 to September 4—Host Chief Adrian S. Meyers

Officers for 1959: President, Chief Reynold C. Malmquist, Minneapolis, Minn.; First Vice President, Chief A. H. Lintleman, Baytown, Tex.; Second Vice President, Chief William Taylor, Burbank, Calif.; Treasurer, Chief G. A. Mitchell, Opelika, Ala.; Executive Secretary, Jay W. Stevens, San Francisco, Calif.; Secretary-Manager, B. Richter Townsend, New York, N. Y.

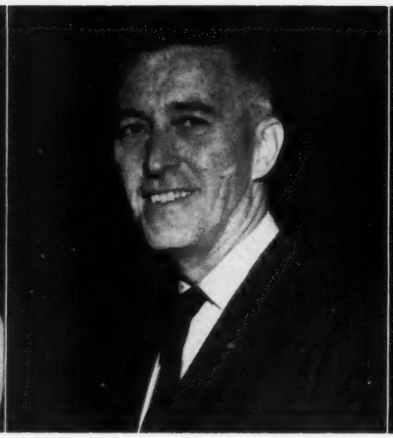
THE BEST SUMMATION of the 85th Annual Conference of the International Association of Fire Chiefs was given by Secretary-Manager B. Richter Townsend when he stated at the final session, "This has been a mighty fine conference." Attendance figures show that over 2,000 delegates and guests from more than 10 countries registered. Chief L. C. Canning, chairman of the Exhibits Committee, reported that 140 single booths and 24 apparatus spaces were contracted for by the exhibitors—a new record!

In spite of the heat wave and smog

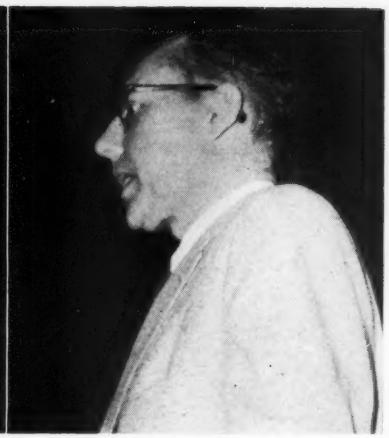


Many delegates and guests visited FIRE ENGINEERING's booth. Among them were (left to right): Robert Singleton, public relations representative of the L. A. County Fire Department; Chief P. A. Cordeta of Tacloban, P. I., and Battalion Chief T. T. Whippo, public relations officer of the L. A. City Fire Department—*Los Angeles F. D. photo*

Rear Admiral J. W. Ailes, III, USN, recalled how the Navy took the fog nozzle developed by former L. A. County Chief Griswold and made it one of the most effective fire fighting tools during World War II



"In peacetime a fire chief is in command. In war he stays in command."—Governor Leo A. Hoegh, Director, Office of Civil and Defense Mobilization, speaking before the conference, stressed fire service responsibilities



". . . The (fire) service has depended completely upon outside invention, ingenuity and engineering for its basic technical development."—Dr. Leonard C. Silvern, Hughes Aircraft Co., and IAFC Institute trustees

which marked the last three days of the conference, the delegates swarmed from the Biltmore Hotel headquarters to the magnificent Shriners' Auditorium to explore the exhibits, and attend the technical sessions, as well as take in the sights offered by fabulous Disneyland, Hollywood and the mountains and sea coast.

The business sessions opened Tuesday afternoon, September 16, with a keynote address by Dr. W. Ballentine Henley, president, College of Osteopathic Physicians and Surgeons. Dr. Henley summed up the lot of the modern fire chief with the statement, "We have to run like mad, just to remain where we are!"

A panel discussion "Yardstick of the Fire Service," moderated by Chief Engineer Phil Pifer, Bakersfield, covered in great detail the use of the National Board's grading schedule for improving

From top to bottom:

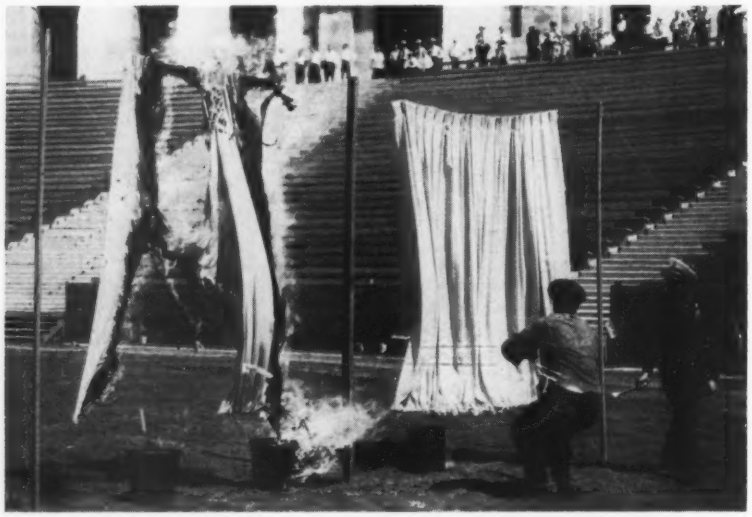
John C. Thornton, A.I.A., discusses architectural problems during "Needs of Fire Service" panel. Left to right are: First Vice President Malmquist, presiding; Moderator James Sweeney; Miles Woodworth; Chief Wayne Swanson and Emmett Cox

Assistant Chief Leon Rasmussen, Midvale, Utah, discusses volunteer problems on panel "Our Largest Fire Force." Seated (left to right) are Second Vice President Lintelman, presiding; Chief J. W. Johnston; Chief C. Adams; Moderator Warren Y. Kimball; Chief Charles Roerich; Chief Ivan Pearson

John Colton, district engineer, Board of Fire Underwriters of the Pacific, introducing panellists of "Yardstick of the Fire Service." Left to right are: J. T. Silveira, manager, District C, Pacific Rating Bureau; Carl Thornton, city manager, Santa Ana; Chief Phil Pifer, Bakersfield, moderator; Chief John Garthe, Santa Ana; Chief G. R. McAlpine, retired, Oklahoma City; Carl Weers, NBFU, San Francisco

OCDM Director Hoegh presenting certificates of accomplishment to (left to right) Chief Earl McDaniel, Lexington, Ky.; Chief George Courser, San Diego; Chief William L. Miller, Los Angeles; Chief Keith Klinger, Los Angeles County; Jack Ruggles, vice president, Seagrave-Hirsch, Inc.; Chief Elmer Gates, Santa Fe Springs, Calif.

Left: President-Elect Reynold C. Malmquist, Chief, Minneapolis Fire Department, in action during conference session. **Right:** California's Governor Goodwin J. Knight congratulates retiring President Donald S. Charles on a successful term of office



Demonstration of treated and untreated draperies was one of the events of the Fire-O-Rama held in the Memorial Coliseum—*Los Angeles County F. D. photo*

local fire departments. The experience of Santa Ana, Calif., in moving from fifth class to a third-class rating and the benefits derived, was explored by the panelists who included: Carl Weers, assistant chief engineer, National Board of Fire Underwriters, San Francisco; J. T. Silvera, manager, District C, Pacific Fire Rating Bureau; Carl Thornton, city manager, Santa Ana; Chief Bob McAlpine, retired, Oklahoma City, past president IAFC; and Chief John Garthe, Santa Ana.

Committee reports

Committee reports closed out the session with Henry J. McFarland reporting as chairman of the Civil Service Classification Committee; Fire Marshal William J. Scott, chairman, Constitution and By-Laws Committee; and Roi B. Wooley, chairman, Communications Committee.

Wednesday's session opened with Charles T. Higgins, Philadedelphia, chairman, Publicity Committee, National Press Photographers Association, urging closer cooperation between the news photographers and public safety groups. He was followed by Jay W. Stevens, who reported on the Governors' Conferences sponsored by the IAFC. A brief summary of the hose thread standardization and the problems involved was given by Battalion Chief Robert Ely, San Diego Fire Department.

Vice President Malmquist then introduced Leo A. Hoegh, director of the Office of Civil Defense Mobilization, who addressed the conference on the role of the fire service in possible defense emergencies. Upon conclusion of his remarks, Governor Hoegh presented certificates of accomplishment to a group of fire officers who attended and participated in the Atomic Energy Commission's test series in Nevada last year.

Chief Officer K. N. Hoare, Manchester, England, was then introduced. Chief Hoare, who is president of the Institution of Fire Engineers, presented President Charles and Vice President Malmquist with certificates of honorary membership in the institution.

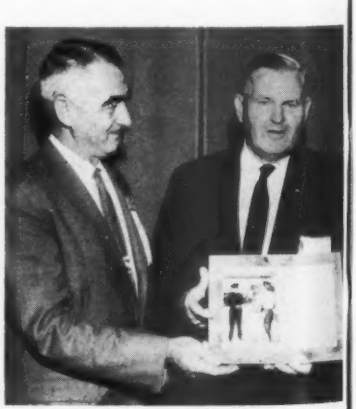
A panel discussion, "The Needs of the Fire Service," followed with Chief James Sweeney, Oakland Fire Department, as moderator. Members included: John C. Thornton, chairman, American Institute of Architects' Committee on Human Safety; Miles E. Woodworth, NFPA; Chief Wayne Swanson, Rockford, Ill., past president, IAFC; Emmett T. Cox, Western Actuarial Bureau. The group discussed the modern hazards facing the fire service today and the steps needed to overcome the many problems.

Fire-O-Rama held

The conference recessed for an early lunch and the guests were then taken by bus to the Los Angeles Memorial Coliseum where a fire fighting display titled "Fire-O-Rama" was viewed. All arrangements for the exciting and interesting show were under the direction of Assistant Chief Art Fowler, LAFD.

Following this display the guests were transported to Disneyland for a tour of the unique attraction, after which a barbecue was enjoyed by all.

Thursday's session was under the gavel of Second Vice President A. H. Lintleman. Leonard C. Silvern, Advanced Scientific Education in Personnel, Hughes Aircraft Co., and member of the Board of Trustees, International Fire Administration Institute, spoke on the "New Age of Science and the Fire Officer." Dr. Silvern reviewed the great scientific advances being made in the fields of physics and astrophysics and then calmly stated that "13,000 years ago . . . bands of natives . . . crossed the Bering Straits . . . and moved down to what is now Canada, the United States, Central America and South America. It is known that these natives used fire and it is also known that they used water to extinguish fire. Except for a few minor modifications . . . there is still basically no difference between what the natives did 13,000 years ago and what the fire department does today in the fundamental extinguishment of fire." He felt by examining the



President Charles presents IAFC Commendation Award to Chief William L. Miller in recognition of Los Angeles home inspection program

The Portland Fire Department Chorus entertained at all major events. The City Council provided transportation and Local 30, IAFF, arranged for time trades in order that the group might attend the entire conference. They were housed at the LAFD drill tower and meal arrangements were by the Portland chief officers. Standing in front are (left to right): Portland Chief Hal Simpson, Accompanist Mrs. Edward Lohr, Director Raymond Osborn, and Chief Keith Klinger, Los Angeles County Fire Department—*Los Angeles County F. D. photo*

process of combustion as carefully as we study nuclear fission and fusion, it may be possible to create a completely new and different method of fighting fire.

John D. Holstrom, chief of police, Berkeley, Calif., discussed "Fire-Police Integration—Current Trends." Chief Holstrom stated that the word "integration" means different things to different people. He proposed a substitute that would indicate varying degrees of integration depending on local circumstances and conditions. He believes the current trend is toward integration in some degree, in an increasing number of places. He recommended the subject be thoroughly studied by police and fire administrators jointly, to arrive at objective conclusions. He warned in his conclusion that unless such a program is developed, we are inviting decisions by persons, no matter how well-intentioned, who are not experienced in technical operations.

James J. Duggan, director of safety and fire protection, Union Carbide and Chemical Co., and member of the Board of Trustees, International Fire Administration Institute, then reported on the "Fire Hazards of Materials." He stressed the importance of suppressing the potential hazards of toxic materials that involve health of firemen due to their characteristics and the tremendous energies which are released when fires or chemical reaction occur. He then proposed an identification system for hazardous materials which would readily identify them to personnel who must by nature of their occupations come into some contact with them.

The afternoon session opened with Rear Admiral J. W. Ailes, III, USN, director, Shore Establishment and Maintenance Division, Office of the Chief of Naval Operations. Speaking on "Team Play—Civilian and Military Fire Services," he extolled the cooperation that exists between civilian fire forces and the military and pointed out that all the armed forces depend on outside fire fighting aid to the fullest extent. He concluded that the Defense Department's fire forces and civilian forces must share their findings on new equipment and methods for fire fighting and prevention so that all concerned may better themselves to master future problems.

The technical sessions were brought to a close by a panel discussion of the problems of "Our Largest Fire Force" moderated by Warren Y. Kimball, manager, Fire Services Department, NFPA. Panel members included Chief Cornelius Adema, Grand Rapids Township, Mich.; Chief James W. Johnston, East McKeesport, Pa.; Assistant Chief Leon Rasmussen, Midvale, Utah; and Chief Ivan Pearson, McMinnville, Ore. The latter was suffering from laryngitis and was assisted by Chief Charles Roerich, The Dalles, Ore.

Courtesy Los Angeles Herald & Express

"But madame, I'm not the doorman, I'm a fire chief!"

Volunteer panel

The members discussed the problems of volunteer fire fighters and methods were explored for possible solutions. The type and amount of help the IAFC could best give was also covered by the panel.

That evening the annual banquet and dinner dance were held in the Hollywood Palladium, with Tommy Farrel as MC. The gala crowd was entertained by Danny Thomas, nationally known screen and TV personality.

Past President G. R. McAlpine presided as the new officers were sworn in

Officers of the Pacific Coast Inter-Mountain Association which met on Monday preceding IAFC conference. Front row (left to right) are President Ivan Pearson, McMinnville, Ore.; Immediate past President Keith Klinger, L. A. County; Jay W. Stevens, Secretary, San Francisco. Rear row: Past President J. Caldwell, Ellensburg, Wash.; Second Vice President H. Dean, Phoenix, Ariz.; Sergeant-at-arms E. Eammons, Glendale, Calif.; First Vice President J. Sweeney, Oakland, Calif.; IAFC Director H. Fisk, Tacoma, Wash.—*Los Angeles Co. F. D. photo*

at the banquet. Included were President-Elect Reynold C. Malmquist, First Vice President A. H. Lintleman, Second Vice President William Taylor, Burbank, Calif.; Treasurer G. A. Mitchell and Jay W. Stevens, San Francisco, executive secretary. Chief Malmquist delivered his speech of acceptance and presented Chief Charles with the past-president's ring and a plaque commemorating his term of office.

Resolutions adopted

The final session was held Friday morning in the Biltmore Rennaissance Room, the main order of business being the report of the Resolutions Committee. Chief Reg Swansborough, Hamilton, Ont., chairman, presented 13 resolutions, of which the following were passed and the remainder referred to the Executive Committee for further action.

1. Reaffirm stand to resist all efforts to integrate fire service with police

2. Petition FCC requesting top priority for public safety radio services and an exclusive point-to-point mutual aid control frequency

3. Urge the adoption of a universal fire reporting telephone number

4. Continue cooperation with the Boy Scout movement

5. Support Muscular Distrophy campaign

6. Recommend OCDM give top priority to hose thread standardization

7. Request the Federal Government to assist the fire service of the Philippines with technical aid and surplus property grants

8. Resolution of condolence to Mrs. Scott on the death of Chief Ralph J. Scott, retired

Divisions active

For two days prior to the opening session of main conference, the Hotel Biltmore was a busy sight as committees and divisional associations held their meetings. On Sunday, September 14, the Board of Directors met in official session. This meeting was recessed and reconvened on Monday, September 15, at the Burbank Fire Department headquarters.

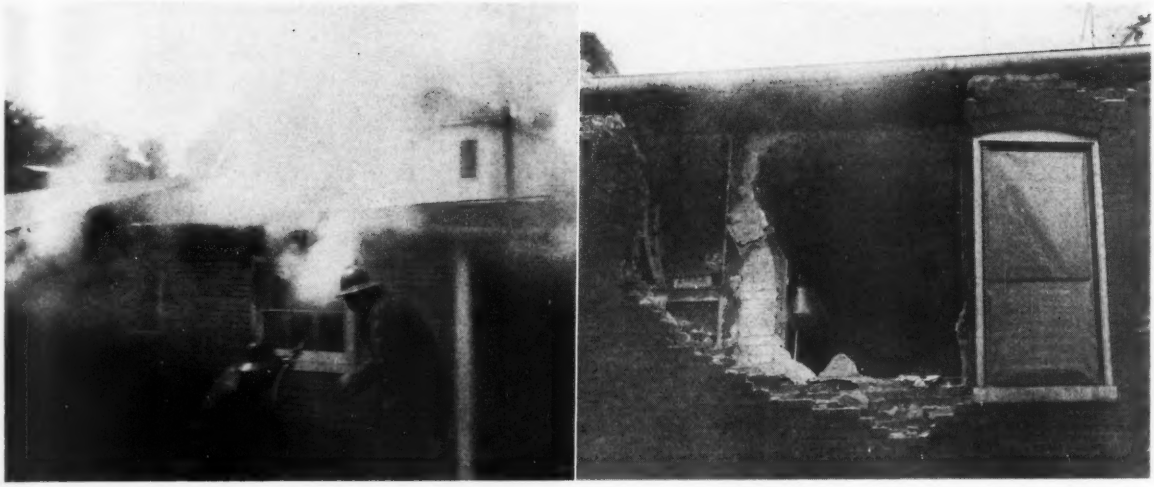
On Monday morning, September 15, the Board of Trustees of the International Fire Administration Institute met in official session and elected Chief William L. Miller, Los Angeles, as chairman; Fire Marshall William J. Scott, Province of Ontario, was elected vice chairman; B. Richter Townsend, secretary; and Chief G. A. Mitchell, treasurer. B. Richter Townsend was also elected acting president in the interim.

During the same morning the Pacific Coast Inter-Mountain Association held their annual meeting and topped the day off with a luncheon. In the afternoon the Great Lakes Association met in official session. Officers elected for the coming year include: President, Chief George Schlotterbeck, Hamilton, Ohio; first vice president, Chief Roland Berens, Bloomington, Ill.; second vice president, Chief Peter Williams, St. Louis Park, Minn.; director, IAFC, Chief Robert McAllister, Plymouth, Mich.; secretary, Chief Willard Compton, Springfield, Ohio.

West Coast Naval fire marshals and station fire chiefs attended an all-day fire protection conference at the LAFD auditorium with O. J. Emory, OPNAV Fire Protection, as coordinator. On Monday evening the Society of Fire Protection engineers held a dinner meeting. □□

Japanese fire chiefs present Captain George S. Kelly, LAFD, with award for his efforts in behalf of the Los Angeles Junior Fire Department program. Left to right are: Chief Koji Fujikawa, Nagoya; Chief Sukeshiro Shima, Kyoto; Miss Fumi Iwamoto; Captain Kelly; Deputy Chief Masajiro Shigeno, Tokyo
—*Los Angeles F. D. photo*

New Los Angeles crash unit is put through its paces during Fire-O-Rama. Test aircraft fire was quickly extinguished with foam—*Los Angeles F. D. photo*



Left: Belleville, Ill., firemen use three booster lines and a hydrant stream to control fire in Abend's Malt Shop. **Right:** Force of blast left gaping hole in wall of Rennecker home. Resultant flash fire involved three bedrooms—*Photos by Jim Brede*

Propane Gas in Water Mains Results in Six Explosions and Fires Within an Hour

Series of freak mishaps occur in Belleville, Illinois, when gas backs up into garage water line used to flush tank truck before making repairs

PROPANE GAS, inadvertently introduced into a section of the Belleville, Ill., water system, was responsible for six explosions and fires. The mishaps occurred when garage maintenance men hooked up a 2-inch water line to a tank truck which had hauled a load of the gas. The foreman supervising repairs to the truck believed the water pressure would overcome any gas pressure in the truck's tank. However, as the apparently empty tank had been exposed to sunlight and heat, pressure within had built up to an estimated 110 pounds.

The series of explosions and fires resulted when gas entered buildings as washing machines were filled or toilets flushed. Ignition was supplied by electric sparks or lighted cigarettes. In one residence where no one was at home, entry of the gas was traced to a leaky water faucet and ignition to the flame of a water heater.

Belleville fire officials were temporarily perplexed and residents alarmed, when the fire department responded to alarms for five explosions and fires, all in the same area of the city, within an hour, on the morning of July 24. In addition, a woman was burned by an explosion to which the department was not called. Fortunately, there were no fatalities.

First fires are minor

At 10:35 a.m., Dispatcher William P. Dolan received an alarm for a fire in the home of Melvin Kronenberger at 1816 West Main Street. Engine Companies 1 and 2, Truck 1, Assistant Chief Fred Bruss and Chief of Department John H. Wade responded.

At 10:36 a.m., an alarm was received for a fire in the home of Elizabeth Klotz at 308 South 20th Street. Notified by radio of this alarm, Chief Wade immediately dispatched Engine 3 to the address. Engine 1, Truck 1 and Assistant Chief Bruss were not needed at the original alarm where Truck 2 was using a booster line in the basement. They proceeded to the second fire which was found to be minor, and a booster line was used. Chief Wade left Assistant Chief Bruss in charge and returned to the first fire.

En route, Chief Wade saw John Carr of the East St. Louis Interurban Water Company opening a hydrant at the corner of 19th and West Main. Carr told Chief Wade that he had found gas in the water main. This was the first report of gas in the mains, and at this time the gas was not identified.

When Chief Wade arrived in the basement of the Kronenberger home, gas was detected coming from the water heater like steam. The heater was shut off and firemen backed out of the building.

Volunteers respond to appeal

At 10:48 a.m., the dispatcher reported by radio a fire in the Abend's Malt Shop at 1609 West Main Street, approximately two blocks from the original alarm. Engines 3 and 1, Truck 1, the assistant chief and Chief Wade responded. The kitchen was involved and the rest of the building was charged with smoke. Three boosters and a hydrant stream were used on this fire. Chief Wade immediately called in all off-duty men and the city's two reserve pumpers. Northwest Volunteer Department with two engine companies, Eastside Volunteer and Swansea, each with one engine company, responded to a

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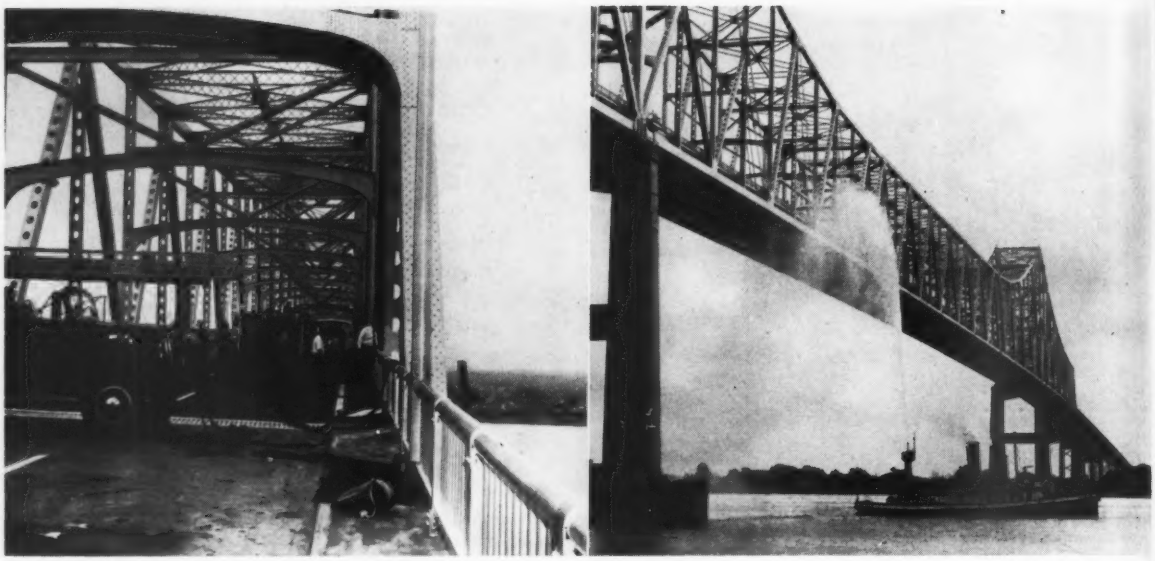


Left: Three-inch hose line lowered from bridge to Engine 5 on ground was secured by ropes to towing hooks of Salvage 1. **Right:** The 10,000-gpm fire tug Deluge passing under bridge with rear mast deck gun in operation—*New Orleans F. D. photos by Ted Picone*

New Orleans Tests Pumping Procedures on Lengthy Mississippi River Bridge

THE GREATER NEW ORLEANS BRIDGE stretching across the Mississippi River from New Orleans to Algiers, La., opened to traffic on April 15. It is 3,019 feet in length and its 1,575-foot central span is said to be exceeded only by the Firth of Forth Bridge in Scotland and the Quebec Bridge in Canada.

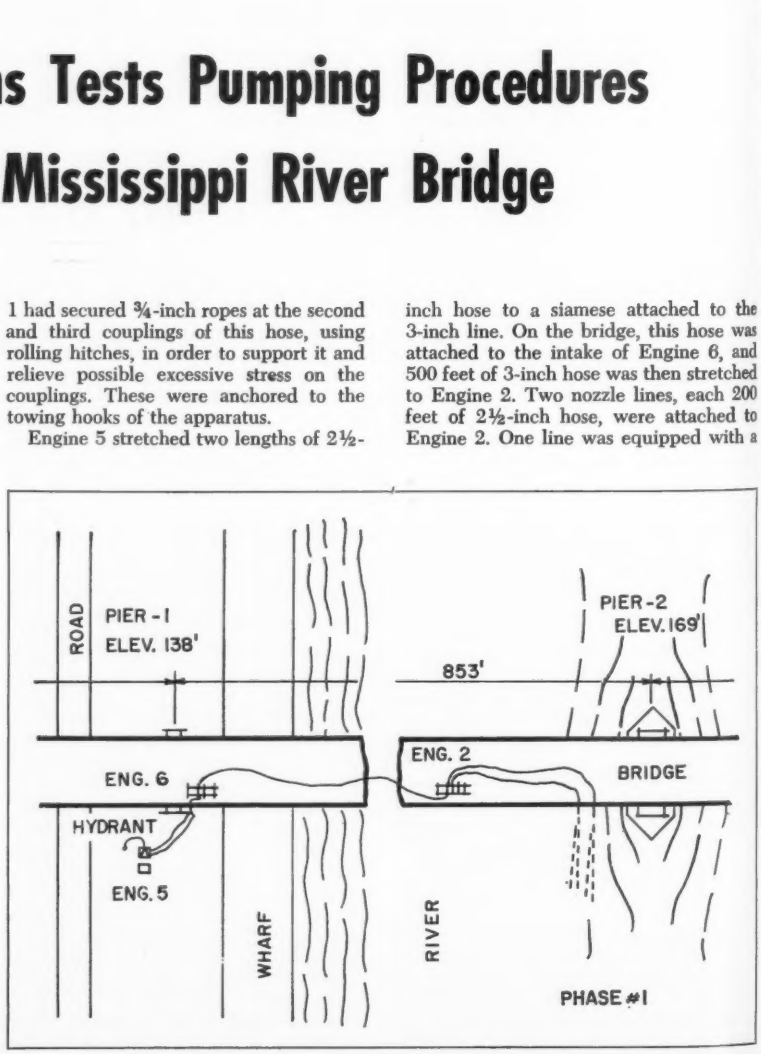
The new bridge is not equipped with standpipes for fire protection purposes, a factor which poses both hydraulic and apparatus problems to the New Orleans Fire Department. On April 13, Superintendent of Fire Howard L. Dey, with Assistant Superintendent Edward J. O'Brien and First Deputy Chief Gerald Sumners, conducted a pumping drill on the bridge to familiarize personnel with methods of obtaining water for extinguishing purposes.

Participating were training division and maintenance division officers; chief officers of the Second District; Engines 1, 2, 5, 6, 33; Ladder 2; Hose Tender 1; Rescue Unit 1 and Salvage 1.

Phase 1

The first test was a relay employing 3-inch hose. Using hose rollers, Hose Tender 1 lowered 200 feet of 3-inch hose from the bridge deck to Engine 5 located next to a hydrant on the ground near the base of the first bridge pier. The vertical distance at this point is 160 feet. Salvage 1 had secured ¾-inch ropes at the second and third couplings of this hose, using rolling hitches, in order to support it and relieve possible excessive stress on the couplings. These were anchored to the towing hooks of the apparatus.

Engine 5 stretched two lengths of 2½-inch hose to a siamese attached to the 3-inch line. On the bridge, this hose was attached to the intake of Engine 6, and 500 feet of 3-inch hose was then stretched to Engine 2. Two nozzle lines, each 200 feet of 2½-inch hose, were attached to Engine 2. One line was equipped with a



Mechanical foam was also tested during operations; Engine 2 supplied the nozzle

1-inch tip and the other with a 1⅛-inch tip.

Engine 5 supplied the relay with water at 150 psi. In turn, Engine 6 pumped at 100 psi and Engine 2 supplied the nozzles at 80 psi pump pressure. Pitot readings showed 48 psi at the 1⅛-inch tip and 50 psi at the 1-inch nozzle indicating a total flow of approximately 468 gpm.

Phase 2

Engine 6 proceeded to the hydrant used in the previous test and pumped at 230 psi into 1,000 feet of 2½-inch hose of which approximately 750 feet was stretched on the bridge floor. The remainder spanned the 160-foot elevation between the ground and the bridge. A nozzle with a 1-inch tip was attached to the line and the pressure was measured at 50 psi; discharge was 209 gpm.

Phase 3

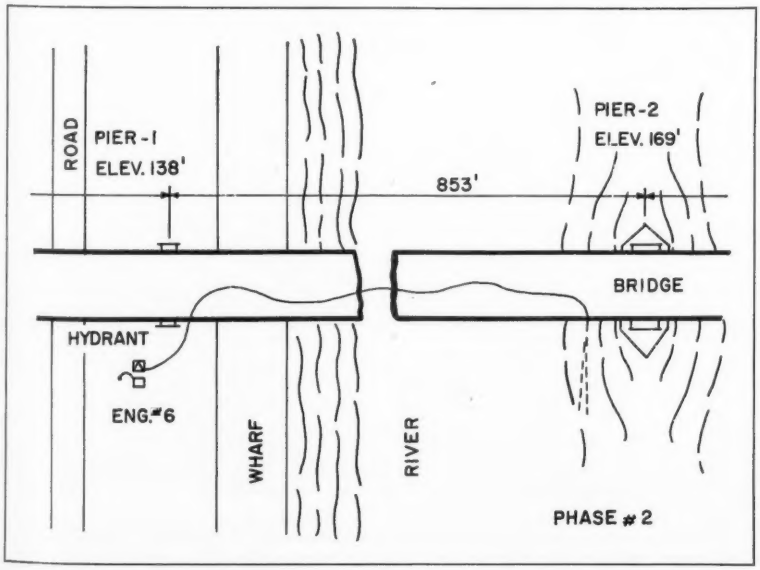
The fire tug "Deluge" tied up alongside the central river pier, New Orleans side, and one 3-inch line was lowered. Again ¾-inch ropes were used to support the hose and couplings and were secured to the tow hooks of Rescue 1, located above the tug. This line was connected to Engine 33 and two 2½-inch nozzle lines, each 200 feet in length, were stretched to the bridge rail. Again 1-inch and 1⅛-inch tips were employed.

The tug pumped at 175 psi and Engine 33 pumped at 80 psi. Nozzle pressures were 58 psi for the 1-inch tip and 50 psi at the 1⅛-inch tip. Total discharge was approximately 490 gpm.

A third 2½-inch line was then stretched from Engine 33, and together with the original two, was connected to the deluge set mounted on Rescue 1. The tug supplied the relay at 175 psi and Engine 33 pumped at 100 psi. A nozzle pressure of 64 psi was recorded with an approximate discharge of 533 gpm.

In the final test the "Deluge" supplied the 1½-inch tip on Rescue 1 at 200 psi. Nozzle pressure was 40 psi and the discharge approximately 422 gpm.

From the tests, the fire department personnel found that it is possible to obtain fair amounts of water on the bridge by use of the various methods. The back pressure encountered, due to the extreme heights, is a factor which must be taken into account by pump operators. By calculation it is 69.44 psi on the New Orleans side and 73.78 psi on the Algiers side of the bridge. □□



CD Plan Released

The Rhode Island Civil Defense Organization, Major General John M. McGreevy, director, has released its blueprint for survival in the event of an atomic attack on the state.

The operational plan, culmination of a 28-month $262,209 Federal Civil Defense project, details equipment and personnel available for disaster work and fixes responsibilities for all those who would go into action in the event of a nuclear attack.

The plan will also be used as a guide for the development of local survival plans in individual communities and the recruiting and training of essential personnel at the local level. It is contained in a volume of 800 pages with a companion volume of some 160 pages.

Telecast Promotes Mid-West Fire Training

Officers of the Southern Wisconsin and Northern Illinois Firemen's Association were featured on a live telecast from Station WISC-TV, Madison, Wisc. on August 20. The purpose of the program, which appeared on Channel 3 at 5:00 to 5:30 p.m., was to acquaint the public with the 22nd Annual Fire School sponsored by the Association and held at the Savanna, Ill., Ordnance Depot on September 6-7.

Participating in the TV program were Emmett Cox, field officer, Western Actuarial Bureau, Chicago, Ill.; Chief Warren Uecker, Savanna Ordnance Depot; President Harvey Ott, New Glarus, Wis.; and Secretary Herman Pfund, New Glarus, Wis.

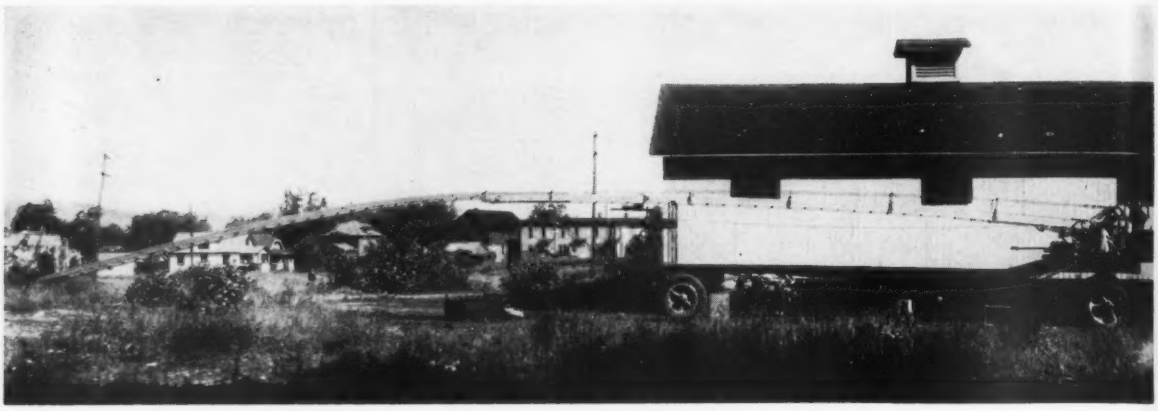
Fire Protection Report Of Grand Rapids Area

The Public Protection Subcommittee of the Grand Rapids Metropolitan Area Study recently issued a fact-finding report (No. 6) on fire protection in the Grand Rapids metropolitan area. The data deals with the cities of Grand Rapids, East Grand Rapids and Grandville, and the townships of Grand Rapids, Walker, Paris, Wyoming and Plainfield.

The survey covered six general topics: Personnel, equipment, protection provided, fire prevention, response and losses, expenditures and insurance rates.

Hospital Film Strips

The Manchester, England, Fire Brigade, Chief Officer K. N. Hoare, M. I. Fire E., in conjunction with the Manchester Royal Infirmary, recently produced three excellent film strips, each with lecturers' notes for use in training hospital staffs in fire safety, patient evacuation and rescue. They may be purchased at $17.00 post-free, from the Institution of Fire Engineers, 94 Southwark Bridge Road, London S. E. 1.



Fully extended 85-foot ladder with man at end of fly during original tests to destruction

Some Properties of Laminated Wood Ladders

Fire officers have expressed interest in the characteristics and behavior of laminated wood aerial ladders as compared with the widely used solid beam wood types. In an effort to help clarify some misunderstandings which persist on the subject, FIRE ENGINEERING is pleased to bring its readers the following opinions of an acknowledged expert, Mr. Hubert Walker, manager, Motor Fire Apparatus Sales Engineering, American LaFrance Corporation.

THE USE OF LAMINATED WOOD BEAMS for an aerial ladder is not of recent origin. Since about 1870 when aerial ladders were introduced to the fire service, most of the ladders were constructed with the main beams of the butt section and fly sections of Douglas Fir. The majority had solid beams of Douglas Fir, but for many years the main beams on the butt section of one leading aerial ladder were of the laminated type.

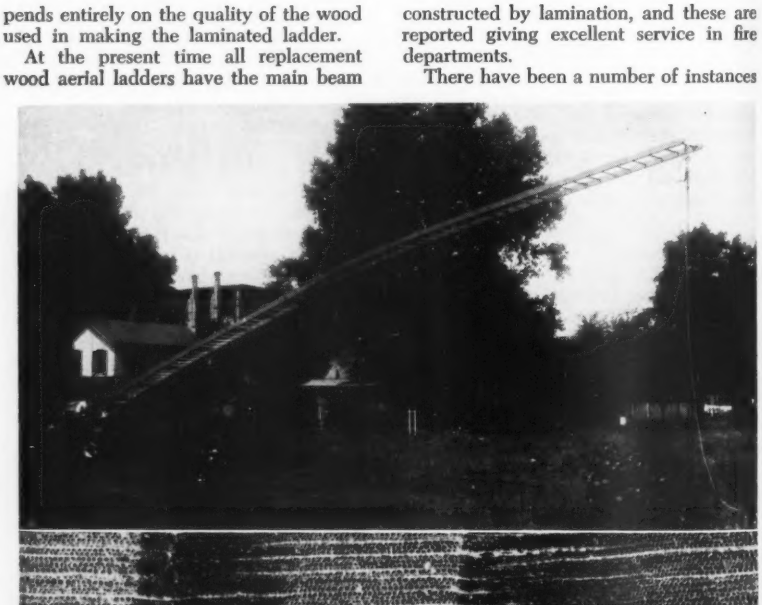
Generally the beam was made up of three separate pieces, glued together to form a single beam. Whether made from three pieces or more, a laminated ladder beam of the same section as a solid beam will have the same strength as the solid beam.

As Douglas Fir of the proper grade for aerial ladder beams became scarce due to cutting off of our forests, it was necessary to resort to an aerial ladder main rail of the laminated type. It is thus possible to select smaller pieces of Douglas Fir of the proper grade and specification, and by laminating and gluing them together with the proper glue, make up a beam that is in all respects equal to the solid beam, and might even be better than the solid beam.

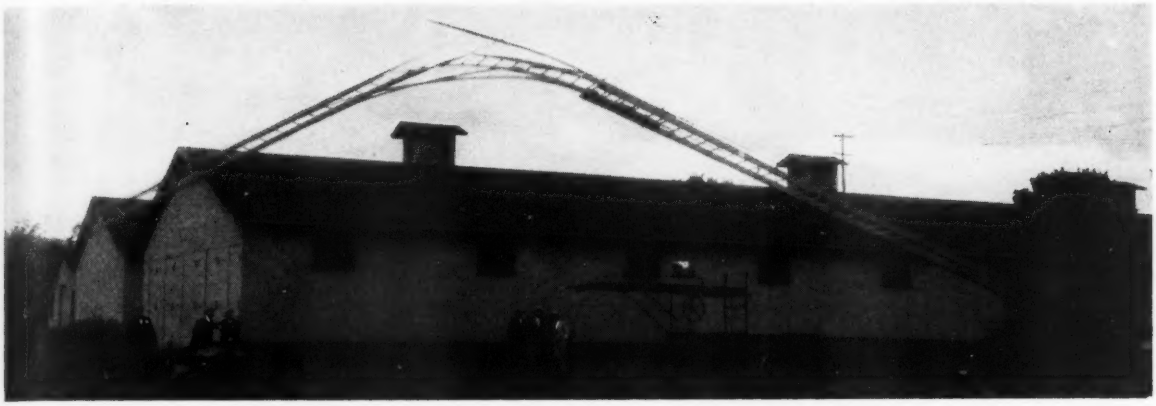
This is because of better selection of material throughout the section. We cannot make a blank statement that all laminated ladders are equal or better than solid beam ladders, however. This depends entirely on the quality of the wood used in making the laminated ladder.

At the present time all replacement wood aerial ladders have the main beam constructed by lamination, and these are reported giving excellent service in fire departments.

There have been a number of instances



Upper: Bow in ladder indicates permanent "set" from weight of man. **Lower:** 10x diameter magnification of Douglas fir cross section. Variation in density of dark summer growth and light spring growth is readily apparent



Ladder fractured when extended at 30-degree angle under 450 pounds test load

in the past three or four years where laminated ladders failed on the acceptance test. FIRE ENGINEERING reported one that failed at the time a new truck was being delivered and similar failures which occurred elsewhere. There have also been failures in service of the laminated type of ladder. These were due generally to using wood of inferior quality which had been kiln dried and all the natural oils and resins were removed in the drying process. The moisture content of Douglas Fir should be between 9 per cent and 12 per cent and the specific gravity should be .45-.55. Wood that is dried to a lower specific gravity or less moisture content loses its strength and resiliency and is easily subject to failure, as evidenced by the actual failures that have taken place.

Properties of wood

Wood is made up of small cells like a honeycomb, and these cells depend on retention of some of their natural oils and resin to preserve their strength and ductility. Properly selected wood which has been air dried and free from checks, shakes, pitch pockets, dry rot, knots, etc. will provide excellent service in either the solid beam or the laminated wood.

The photo shows a 10× diameter magnification of a cross section of Douglas Fir. This photograph shows the cell structure of wood very clearly. The dark areas are the summer wood growth which has a high density. The light areas are the spring wood growth, and this is not as dense and the cells show up very clearly. The summer growth is relatively much smaller than the spring growth.

Wood aerial ladders were designed for normal fire service operation, basically rescue and for entrance into upper floors at an angle of elevation of 50° or higher. The wood aerial ladder was never intended for operation at low angles, and no data is available on any of these wood ladders for low angle operation. Stabilizing jacks or other devices were never designed or provided for such low angle operation.

Very few manufacturers, however, conducted tests to destruction of a wood ladder to determine load limitations. Approximately 25 years ago, American La-France did conduct some tests of an 85-foot wood aerial ladder. These indicated that in a horizontal position the wood ladder, fully extended, had no load-carrying ability as the fly would not support any load at the outer end. We would consider a minimum of 200 pounds as a load, which is the equivalent weight of one man. A load of this magnitude would produce permanent set in the fly section and the breaking point was slightly over 400 pounds as shown in the accompanying photograph.

The introduction of the all-metal ladder with its greater strength and load capacity gave the fire department a much greater range of operation for the aerial ladder than was ever possible with the wood aerial ladder. For example, the 75 foot metal aerial ladder at an angle of 60° can carry four men safely, and yet when lowered to an angle of 50°, the maximum extension is 56 feet. □□

Warren, Mich. Expands Ambulance Service

Keeping pace with the needs of a rapidly growing community is one problem faced by fire departments in every section of the country. Often this includes broadening the department's facilities to provide emergency ambulance service, as well as modern fire protection. The Warren, Mich., Fire Department, under the direction of Commissioner William B. Burr, is meeting this challenge with commendable success. The department has doubled its manpower from 48 to 96 men and increased its engine companies from three to seven in the past 15 months. New training programs for probationary and other personnel, are currently under way.

Ambulance service, Commissioner Burr notes, is recognized as a vital and necessary adjunct. The city's ambulance service originated in 1954 with a single vehicle and has increased to where it answered 619 calls last year. In addition to other types of emergencies, an ambulance responds on all fires except for rubbish and grass.

To meet expanding needs, two new ambulances were recently purchased. Each can accommodate four litters, has compartments for resuscitator and three oxygen tanks, medicine dispensary cabinets and two-way radios. Bunk tops are reversible for use as fracture boards.

The new vehicles and the original ambulance are strategically located. Firemen of the Warren Department are trained in ambulance procedures and all members hold advanced first aid cards.

Other new equipment to be added under the department expansion program, in the near future includes: A new 85-foot aerial ladder and two new station wagons for use by the department's chief officers, a new 1250-gallon tanker and a new utility truck. In addition, a new fire station is under construction.

New ambulances are part of the Warren, Mich., Fire Department progress program. Here Commissioner William B. Burr accepts delivery from Robert Rossiter of Miller-Meteor

N. Y. F. D. photo by Hellriegel-Heffernan

Fire in scantlings and wooden forms beneath copper sheathing was difficult to reach

FIRE in the Sky

New York fire fighters solve the problems of a fire in a steep roof 400 feet above the street

ON JULY 22ND, units of the New York Fire Department responded to a telephone alarm for a fire in the Hampshire House, 150 Central Park South, Manhattan, a modern 38-story, fireproof hotel. Except for a special call for a rescue company, at no time did the worker exceed an "all hands" job. The fire is noteworthy, however, because it was fought approximately 400 feet above the street and because of the handicaps overcome.

The swank residential hotel's steeply pitched roof is four stories high and angled at each end, roughly resembling a pyramid. The roof consists of 5-inch reinforced concrete covered with tar paper. Copper sheathing is attached to 4 by 4-inch scantlings bolted to the concrete and running vertically from the base to the peak of the roof. At each corner, semi-circular wooden forms run vertically from the base to the peak of the roof beneath the copper sheathing.

The day before the fire, roofers were using electric soldering irons and liquefied petroleum torches to resolder copper sheets on the north side of the roof. They were working from a two-story scaffold built up from the top set-back of the building.

On reporting for work on the 22nd, workmen found smoke pouring from the seams of the copper sheathing along the north and south corners of the east side of the roof. Building personnel telephoned in an alarm.

The first companies to arrive found the attic heavily charged. Discoloration of the copper sheathing and the source of the smoke indicated that the fire had traveled up the northeast ridge and was rapidly moving down the southeast one.

After a preliminary examination disclosed the extent of the fire and its path of travel, a two-pronged attack was decided upon—one from the outside via the scaffold, and the other from the inside through the concrete. At this time, however, there was no means available to scale the steep roof.

Engine Company 23 stretched two 1½-inch lines from the standpipe riser, using 2½ by 1½-inch reducers, to the base of the north side of the roof. Although the building is equipped with fire pumps, it was decided as a safety measure to use the pumper, thus insuring full control of operating pressures. The pumper was operated at 275 psi. The 1½-inch lines were used for better control and safety, operating in the cramped space at the base of the roof.

The bottom of the semi-circular wooden form previously described was opened up and the stream directed upword within it. This was effective as far as the stream reached, but the form could not be opened up beyond 7 feet. Falling embers increased the hazard to the men operating at this position.

Roofers' ladders used

Further advance from the outside was delayed pending the arrival of borrowed sectional roofer's ladders which arrived several hours later. The sections were bolted together and held against the steep roof by driving nails through the copper sheathing into the 4 by 4's and wiring the ladders to the nails. Firemen operated effectively from these ladders using a small hatchet, ladder belts and roof ropes. As the copper sheathing was removed, extreme care was taken to properly lash it and safely lower it. These operations were hindered by intermittent showers.

The interior attack was aimed primarily at venting the attic and reaching the fire through the concrete, but it was first necessary to move doors, furniture and other articles stored in this space. Conditions were so bad at the start that masks had to be used.

Firemen started a hole through the concrete with hand tools, but progress was too slow and Rescue 1 was specialcalled. Using an electrically operated jackhammer loaned to the department for trial by the Homelite Division of Textron, Inc., holes were made about two feet above floor level. As soon as the holes were large enough, a line was used to extinguish the fire within reach, and fans were used to ventilate the area. Masks could be dispensed with except occasionally when the smoke backed down. Platforms were built inside the peak, from which holes were drilled at the upper levels.

Except for an isolated spot or two, the fire was extinguished by 6 p.m. The first-due companies took up about 11 p.m., but a watch line was maintained until 11 a.m. the following day.

A minor communications problem was

Continued on page 955

Instructor guides trainee using dry chemical on a gasoline spill fire during New Jersey Industrial Fire Chiefs' Association session. Safety crew stands by in background in case of necessity

Esso Trains Industrial and Municipal Fire Fighters

INDUSTRIAL FIRE FIGHTING and training to meet specialized requirements has become an increasingly important adjunct to many manufacturers. Because of the hazardous nature of the processes involved in their installations, more and more companies maintain organized fire brigades for immediate protection purposes. Typical of these is the huge Bayway Refinery of the Esso Standard Oil Company at Linden, N. J.

In order to train its employees in emergency fire fighting, the company has built a training site on the refinery grounds. It is used for initial 'rookie' training of the brigade fire fighters as well as for in-service and refresher training. It is also used for familiarization training of company engineers and employees whose duties require their working in and around the refinery equipment. The latter may be called upon in emergency to assist the plant brigade in fighting a serious fire.

The school site is equipped with mock-ups of equipment used in the refining and storage of petroleum products, and by utilizing these it is possible to set controlled fires which effectively simulate nearly all of the emergencies which might occur. Fire fighting equipment and extinguishing agents used by the plant brigade for each type of fire are available for demonstration and use by the students in order that practical applications may be made.

All training and demonstrations are under the direction of Plant Fire Chief John E. Hoff. Each student is given a printed outline of the schedule to be followed and the procedures to be employed.

A briefing session is held in a classroom where the class instructor outlines the use and application of the fire fighting equipment and extinguishing agents. Water, foam, CO-2 and dry chemicals are discussed and the advantages and disadvantages of each are explained. At the same time, the subject of safety regulations is introduced together with the precautions to be observed.

Following the briefing the class is transported to the training grounds where each student is outfitted with a turnout coat, boots and helmet for his personal protection before the practice fire fighting begins. During the training period an instructor remains constantly with the individual or team executing an evolution; a safety group also stands by in case of need. When an employee completes his training, the fact is recorded in his personnel record of the company.

Elizabeth, N. J., municipal firemen under the direction of Esso instructor use carbon dioxide on hot fire in metal mock-up

The facilities and instructors of the school are available for training of municipal fire fighters and many of the nearby fire departments have taken advantage of this opportunity. In addition, the Industrial Fire Chiefs' Association of New Jersey holds regular sessions at the training site in order that its members may be better schooled in the latest ideas and procedures for fighting industrial fires. □□

Portland fireman uses waste can lid to collect unexploded fireworks following July 5 blast that killed one, hurt many and caused widespread damage

Fireworks Warehouse Blasts Wide Residential Area

One killed, many injured, over 200 dwellings damaged as 20 tons of pyrotechnics let go in Portland area

A FIREWORKS WAREHOUSE located, of all places, in a residential district of Portland, Ore., exploded July 5, resulting in the death of a 4-year-old girl, the hospitalizing of 26 persons and treatment on the scene in fire department first aid rigs of many more. The warehouse disintegrated in the blast which damaged 289 homes in an 18-block area. The damage to dwellings reportedly totaled $340,000 and to businesses, $94,000. Five dwellings were destroyed by the explosion or ensuing fire, 111 suffered major damage and 173 received minor damage in a three by six-block section. Twenty businesses were damaged, three receiving major damage, one was destroyed and six had minor damage.

That is the statistical story. But the real story goes behind the statistics. It began years ago when the Signal Fireworks & Specialty Co. was permitted to occupy a location at 8404 Southeast 84th Avenue at Powell Boulevard, only two blocks outside the city boundary. It is a quiet neighborhood of houses and stores. There was no one under the law, at that time, who had any power to force the company to move from its obviously dangerous location to one where an explosion would not create such widespread havoc. It seems that Multnomah County, outside of Portland, has had a zoning law only since 1953—and that law was never retroactive. Therefore the explosives plant stayed where it was under what is called a "non-conforming use."

Not only was it permitted to remain a hazard, but about three years ago, the planning commission permitted the warehouse to make a small expansion of one of its buildings. Again, only a few months ago, the commission held a public hearing on Signal's request to replace one of its 70-year-old wooden buildings with a concrete block structure. This was done on order of the state fire marshal who found the wooden building unsafe. It was this building in which the fire originated. Only the week before the fire, a representative of the state fire marshal's office inspected the plant and reportedly found it complied with safety regulations.

What caused the blast which came at 1:42 a.m. on July 5 when the plant was empty of personnel, has not been determined. Two sheriff's deputies were only two blocks away at the blowup. They promptly radioed for help, put in a call for ambulances, and then started to clear people out of the area. Exploding fireworks furnished ample proof that evacuation for the residents in the immediate vicinity was the only safe measure.

The shock broke power and telephone lines, burst water pipes and crumbled chimneys and walls throughout the immediate neighborhood. It broke windows, knocked plaster from walls and did other damage farther away. Screaming people rushed out into the streets scantily dressed, ducking darting fireworks and wood and metal splinters. Patrons of a nearby drive-in theatre nearly panicked from the explosion and shouts of "atom bomb" were heard. Ten patients of a nursing home on East Powell Boulevard miraculously escaped without a scratch, although nearly every window in the building was broken and some patients actually received bits of glass in their faces.

The small victim, Mary Beth Howe, was trapped and burned in the destruction of her parent's dwelling in the rear of the warehouse. Her parents and little sister escaped. Several firemen were slightly injured and a city policeman was struck by a hit-and-run driver and injured while directing traffic.

Fire fighters quickly brought the fire under control, but extensive coverage of the neighborhood was required to check on the sizzling, screaming, popping fireworks. Warnings against picking up any supposed "duds" were issued to residents of the area after the incident.

It is reported that 20 tons of fireworks of various kinds went up in the blast. Damage might have been greater but for the fact that stocks at the time were at low ebb—large shipments having been made prior to the Fourth.

The cause of the explosion or the fire which touched it off, was not disclosed although authorities have not ruled out the possibilities of arson. Invaders had been known to enter the plant upon previous occasions.

Ambulances hurrying victims to hospitals, and fire apparatus responding from city and county, were slowed by long lines of traffic that blocked almost every major road. It was more than an hour after the initial blast that police had the area blocked off. □□

Abington Township volunteers train on aerial ladders at new drill ground. Tower is integral with fire training building

Township Volunteers Have Unique Training Center

By EDWARD V. McNEILL

Public Relations Director
Abington Township Firemen's Association

AFTER READING all available data, studying building plans and actually visiting training centers in the eastern United States, the Abington Township, Pa., Fire Department came up with ideas and specifications for a training building on their own fire school grounds located at Florey Lane and Arbuta Road, Roslyn, Pa.

The completed concrete block building was recently turned over to the five member volunteer companies for single and inter-company training sessions. The structure includes a five-story drill tower and a one and two-story building in a single unit.

Because fire fighters encounter many different types of roofs in their operations, the volunteers decided that the buildings should contain as many types as possible. Two peaked roofs over the smaller buildings offer the smoke-eaters four of the most common roofs found in their area such as slate, wood, asphalt and asbestos shingles; the roof of the drill tower is a flat asphalt-coated surface with metal flashing. Firemen get the feel of working on these different types of roofs, as well as an opportunity to study their construction.

A variety of doors throughout the buildings include both wood and metal, inside and outside types, as well as a battened door such as may be found on a barn, warehouse or factory building.

Many types of windows are also incorporated into the entire building. These include double-hung, check-rail, frame, casement, projected and dormer. They are constructed of wood, steel and aluminum. Two window openings are also wood-shuttered; all contain wired glass for longer life and safety. Firemen are afforded the opportunity to remove screen and storm sash properly during their training sessions.

The drill tower proper is 16 feet square on the inside. The first, second and third stories have concrete floors and the fourth and fifth have wood flooring. A metal stairway joins the first and second floors, while wooden stairs continue to the fourth floor. The fifth floor and roof have to be reached by outside ladders or through trap doors, thus enabling the men to practice with folding or attic ladders. The whole tower can be closed up and charged with smoke and actual fires can be built on the ground floor to simulate a basement or cellar blaze that would have to be reached by advancing hose lines down the metal stairway. Lines can also be taken up the inside stairs, while the outside of the tower will be used mainly for teaching placement of ground and aerial ladders, handling hose on ladders properly, and rescue operations.

The first floor of the two-story "house" is partitioned off into two 6 x 10-foot rooms with a connecting door; one room has plastered walls over wood and rock lath. The ceiling is divided into three different sections of plaster over wood, rock and metal lath. The other room has an exposed ceiling and wall studs for additional training and construction studies. A wooden stairway, complete with treads, risers and bannister leads to the second floor, or attic, with exposed roof rafters, a dormer window and a small window near the peak. Flooring in this attic can be actually chopped away to teach the volunteers proper methods of opening floors, walls and ceilings; a complete floor will be replaced periodically with a cheap grade of lumber. This building will be used mainly for forcible entry and related practices.

The one-story building has concrete

Continued on page 955

Newly elected CAFC officers are (seated left to right): Chiefs L. Arthur Burch, St. Catharines, Ont., immediate past president; A. H. Clark, Lakefield, Ont., secretary-treasurer; Kenneth Putnam, Kitchener, Ont., president; W. P. Donahue, Sherbrook, Que., first vice president; Walter Redman, Flin Flon, Man., second vice president; (standing left to right): Fire Marshal W. J. Scott, Toronto, Ont., IAFC director; J. L. Arnott, Toronto, Ont., conference manager; Chiefs B. R. Wade, Kentville, N. S., director; H. S. Bird, Vancouver, B. C., past president; Fred Vivian, St. Johns, Nfld., director; M. H. McKie, Moncton, N. B., director; George Fox, Toronto, Ont., director; and Reg Swansborough, Hamilton, Ont., director—*Ontario Fire Marshal photo*

Canadian Chiefs Hold Golden Jubilee Conference

The Canadian Association of Fire Chiefs held its 50th annual conference at Hamilton, Ont., August 18 to 21. It was a fitting celebration of the association's 50 years of service to the Canadian people. More than 500 delegates attended the four-day meeting, the largest in the CAFC's history. The progress that the association is making in the Dominion is apparent from the membership committee's report that 171 new members had joined since the beginning of this year.

Technical papers were presented on "Fire Department Public Relations," by B. Richter Townsend, secretary-manager, International Association of Fire Chiefs; "Arson Detection," by J. W. Ensinck, manager, Underwriters Investigation Bureau; "The British Fire Services," by H. M. Smith, chief of the British Fire Services, London, England, and "Ontario Fire Training College," by W. J. Scott, provincial fire marshal. There were also panel discussions on "The Municipal Approach" and "Fire Department Promotions." Members of the Hamilton Fire Department under Director of Training A. E. Thompson, gave a demonstration of fire department evolutions.

Chief Donald S. Charles, Charlotte, N. C., represented the IAFC and spoke on "Your International Association."

Dixon Hosts Exposition for Illinois Firemen

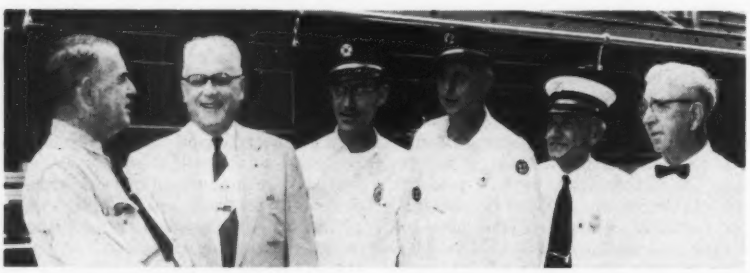
Dixon, Ill., held its first Fourth of July Fire Exposition and Fire School on July 3 and 4. It was sponsored by the Dixon Chamber of Commerce, the Dixon Community Fire Department and the Dixon Fire Department.

This method of celebrating a safe and sane Fourth of July provided a great deal of education for the citizens, along with valuable information and practice for firemen of the area. In spite of rain on the morning of both days, all events took place on schedule.

Activities on July 3 consisted of hose and pumper evolutions; demonstrations of aerial ladders, resuscitation and first aid, high and low pressure fog, radio and radiac, as well as relay pumping.

On July 4 the day opened with a water fight elimination contest, with eight teams battling for three prizes. This was followed by a parade at 1:00 p.m., after which fire extinguishing demonstrations were shown on seven buildings, cars and pits. All of the water used for fighting the fires was brought in by tankers.

More than 3,500 people from the surrounding area viewed the two-day show which was under the direction of Fire Commissioner A. C. Higby. He was assisted by Chief Alvin Sheely and Assistant Chief Edward Voss, Community Fire Department; Chief Gail Keyser, Dixon Fire Department; E. O. Brooks, Chamber of Commerce; Chief Joe Fetters, Firemanship Training, University of Illinois; and Illinois State Fire Marshal John J. Twomey.



Principals at the Dixon Fire Exposition included (left to right): Commissioner Higby, State Fire Marshal Twomey, Chief Sheely, Assistant Chief Voss, Chief Keyser and Deputy State Fire Marshal Van Ormer. Over 3,500 people viewed the two-day exposition

New Haven County Radio

Central control facilities, the hub of the new disaster-aid radio network in New Haven County, Conn., are set to begin operations soon. The emergency radio network, specially designed by William Sexton, Allen B. Du Mont Laboratories, Inc., is expected to eventually tie in every fire department in the county with the dispatching center in New Haven, Conn., and the main control center in Middlebury Town Hall.

Included in the initial installation is a 250-watt base station in Middlebury, with remote control facilities at the New Haven Fire Headquarters and at the Middlebury Fire Department. The Middlebury remote unit will be used in cases of excessive "air" traffic at the main dispatching point.

The New Haven station is connected with the base station by 150 mc radio control link, while the Middlebury facility will be connected directly to the transmitter.

A selective calling system permits automatic choice of either the county-wide or state-wide frequencies operating in the 30 mc band, and will also allow choice of either of two receivers to be used.

The New Haven County Fire Chiefs Radio Committee, organized in 1956 to work out plans for the mutual aid emergency program, includes Captain J. J. Prouix, chairman, Middlebury Fire Department; Captain William Kirby, state fire coordinator for civil defense; Chief Francis Lynch, Middlebury; Fire Marshal John Tweed and Chief John F. Zvonkovic, Branford Fire Department; and Chief Edward Weaving, Naugatuck Chemical, Division of U. S. Rubber Corp.

Mine Fire Burns 20 Years—Project To Eliminate It

The Federal government has given approval for a $3,500,000 redevelopment project for Carbondale, Pa., to rid that city of an underground mine fire which has ravished the area for 20 years.

The project will involve relocating 462 buildings and utilities, as well as 450 families who live in the west side area of the city. Trenches will then be dug around the 130 acre site to contain the blaze.

Following this preparatory work the coal will be strip mined, gradually working toward the center of the fire until the burning material is removed. It has been estimated the endeavor may take as long as 10 years to complete.

Final plans for the work are now being studied by the Carbondale Redevelopment Authority and the Federal Housing and Home Finance Agency's Urban Renewal Division.

short cuts and gadgets

Improvised Salvage Chute In Use at Maryland Fire

The importance of salvage, especially among volunteers, is being emphasized by many fire schools. The use of professional salvage methods is typified here as College Park and Riverdale Heights, Md., firemen, using an improvised chute made of a short ladder and a salvage cover, rid a dwelling of water during an actual fire. The action by the men shown in this on-the-spot photograph helped minimize the water damage to the building.—*University of Maryland Fire Service Bulletin*

Hammond Aerial Inter-Com Increases Ladder Efficiency

The Hammond, Ind., Fire Department has equipped its 100-foot aerial ladder with an inter-com system designed and built by Assistant Communications Engineer John Kondra.

It consists of a weatherproof trumpet speaker-microphone and amplifier mounted on a specially constructed pipe stand behind the turntable control pedestal and illuminated for night operations. A second speaker-microphone is mounted permanently on the ladder rail at the tip of the fly section.

The speakers are connected by means of 100 feet of wire contained on an automatic reel which provides the proper amount of wire at all times without slack as the ladder is extended or retracted. Power for the unit is taken from the vehicle's electrical system.

Chief Edward J. Spolnik believes the use of the new device will assist in overcoming the problem of directing firemen in the operation of ladder pipes during smoky or night fires when the tip of the ladder may be obscured. The ladderman may use both hands in performing his regular duties as it is not necessary to touch the unit at any time. It is said to be sensitive enough to pick up a man's normal voice at a distance of ten feet.

Left: Fireman Benjamin Michew using speaker mounted on tip of Hammond ladder. It is not necessary for him to touch it during operation. **Right:** Engineer Kondra demonstrates system during test. The automatic reel for the remote speaker cable is located at foot of amplifier mounting post on ladder turntable

Reflective Invalid Marker

The Teaneck, N. J., Fire Department has instituted a program of marking homes occupied by invalids or helpless persons with reflective decals. The purpose is to make such marked homes readily known to the firemen so that in the event of a call for fire or any other emergency, the primary act of the department will be to see that such persons or persons are removed from the building. Any homeowner desiring to have his home marked, writes to the fire department and gives his name, telephone number and the condition of the invalid or helpless person or persons. Upon receipt of the letter, a representative of the department calls by telephone and makes an appointment to mark the owner's home.

Marking is accomplished by placing a 4-inch decal on the front of the house near the house number, a 3-inch decal on the rear or side entrance, two smaller decals on the windows of the room occupied by the invalid, and one small decal on the door frame leading into the room at about eye-level height.

Reflective Telephone Emergency Stickers

The Santa Fe Springs, Calif., Fire Department recently conducted a house-to-house campaign to distribute the emergency telephone number of the department.

The number is printed on an adhesive sticker in reflective ink and is placed on the cradle of the phone where it is immediately seen when the handset is lifted. The police department number is also listed. □□

FALSE ALARMS

Pushover

The wealthy motorist, suddenly finding he was out of gas, coasted into a nearby roadside gas station. The attendant was a slow-moving individual.

"Here, boy," the motorist said gruffly, "get a move on! I want some gas. You'll never get anywhere without push. It is essential to success. When I was a boy, I pushed, and kept pushing, and that got me where I am today."

"That sure is fine," replied the unawed attendant. "I guess you'll have to push some more right now. There ain't a drop of gas in this station!"

Young Thing: "Do you think that absence makes the heart grow fonder?"
Voice of Experience: "Definitely! Every time that Jack goes out of town, I like Bob better!"

Mother asked little Willie what his fireman-father said when he fell off the ladder. Willie said, "Mother, shall I leave out the naughty words?"
"Of course, dear."
"Well, Mother, he said nothing then!"

Instructor: "Do you know how to get the cubic contents of a barrel?"
Student: "No sir, I never was a fraternity man."

Patient: "Will you please tell me the difference between nervousness and shyness?"
Doctor: "Pretty women make me shy. Their husbands make me nervous."

Kinkchaser had some physical symptoms which were alarming enough to take him to the department doctor for a medical checkup. Having always been afraid of doctors, he stopped at a nearby tavern to fortify himself against anything which might happen.

He then went to the doctor's office and had the examination. When it was over, he asked eagerly: "What do the reports show, doctor?"

"According to our analysis," replied the doctor, "there is every indication that a small percentage of blood is getting into your alcohol system."

Evil Company

A young school ma'am took her first assignment in a hidebound Republican town. One afternoon she was stopped on the street by one of the school board members.

"Miss Jones," he said deferentially, "I hope you won't take this as an offense, but folks are saying you are seeing a lot of Elmer Jenkins lately."

"Why, Mr. Purdy," the teacher replied astonished, "Mr. Jenkins is 80 years old and harmless as a baby."

The board member shook his head.

"Miss Jones, you don't seem to understand. That man is a Democrat."

A queen bee has a hundred drones,
Whom she must pet and please—
Just think of all the eggs she lays
To hatch out sons of bees!

Many a woman who took her husband in now complains because he won't take her out.

The head nurse of the hospital came into the room and found a student nurse holding both wrists of a recently admitted fireman.

"You don't have to hold both wrists to check the pulse," stormed the head nurse.

"I'm not holding both wrists to check his pulse," replied the pert little student. "I'm holding them to check his impulses!"

Captain: "What do you mean you got that black eye from a fire?"

First whip: "My wife caught me kissing an old flame."

Two of the local vamps were sitting at a bar. "Tom," asked one, "after you drink a lot, does your tongue burn?"

"I don't know, Sam," replied the other, "I've never been drunk enough to light it."

Plugwrench said: "Another nice thing about those modern sport cars is that if you flood the carburetor, you can just flip the car over your shoulder and burp it."

Wife: "Don't you think, dear, that a man has more sense after he's married?
Hubby: "Sure do—but then it's too late!"

When you are old and full of years
You must give up the cup that cheers,
Golf, tennis, and badminton, too;
But alas, the women give up you!

Native: "Well, what do you think of our little city?"
Visiting Fireman: "It's the first cemetery I ever saw with electric lights."

Bill Truckman calls his girl friend Axhead because she's always flying off the handle.

"I have hallucinations."
"Don't be foolish, only the rich have hallucinations—you're just plain nuts."

Just because nobody disagrees with you doesn't mean you are so terribly smart. You're probably the boss!

Good judgment comes from experience and experience comes from poor judgment.

Sue: "If you were me, would you accept Wilbur?"
Lou: "If I were you I'd accept anyone!"

Arsonists aren't the only guys who get in trouble when they start playing with fire.

". . . . **And they demonstrated** a new type ladder truck that we definitely must buy. I also recommend purchasing the revolutionary new. . . ."

Let's talk frankly about mildew

Fire hose manufacturers have various "treatments" which they apply to their hose to render it mildew resistant.

So does Eureka . . . and we believe that ours is second to none!

BUT our more than 80 years' experience in the manufacture of the highest-quality municipal fire hose has convinced us that the *only sure way to prevent mildew* in fire hose is to *dry it thoroughly* every time it gets wet. Don't overlook even a light shower or stray spray at a fire which may dampen the unused hose in the truck bed.

It is just as important to keep hose *dry* as it is to keep it *clean*. "Treatment" doesn't take the place of good care in prolonging hose life. At best, it provides mildew *resistance*, not prevention! Such treatment may not *wash out*, but normal abrasion might *wear through* it. So play safe! KEEP YOUR HOSE DRY!

We sincerely hope that this frank word of caution will substitute for costly experience in many fire departments . . . particularly in financially-pressed volunteer companies! Naturally we'll be happy to hear from you if you have anything to add on this subject.

Note how criss-crossing vertical cords tie all plies into a single jacket.

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

1 Market Street • Passaic, New Jersey *Division of* **United States Rubber**

WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

New C-O-Two Marine Systems

A series of C-O-Two "packaged" marine fire extinguishing systems, available in sizes from 10 to 75-pound capacity, is now being marketed by The Fyr-Fyter Company, 221 Crane Street, Dayton 3, Ohio, through all Pyrene C-O-Two, Buffalo and Fyr-Fyter outlets.

The units are designed to protect motor boats, cabin cruisers, small auxiliary craft, and party fishing boats in compliance with new Coast Guard regulations.

All cylinders are equipped with a new valve that accelerates discharge rate and a non-electric rate-of-rise release triggered by a new type of heat-actuated detector.

A free eight-page brochure containing specifications and price information may be obtained by writing the company.

Radio Traffic Control System

Traffic signals in Washington, D. C., will soon be interconnected by a radio traffic control system. The $167,000 award for controlling signals at 87 intersections has been let to Motorola Communications & Electronics, 4501 West Augusta Boulevard, Chicago 51, Ill.

The centrally controlled radio traffic control system will provide for coordination and synchronization of traffic lights, and for automatic change of cycle to meet demands of fluctuating traffic flow at various times of the day and week.

G-E Consolidates Plants

General Electric Company has announced plans to consolidate its communications business in an existing company plant in Lynchburg, Va.

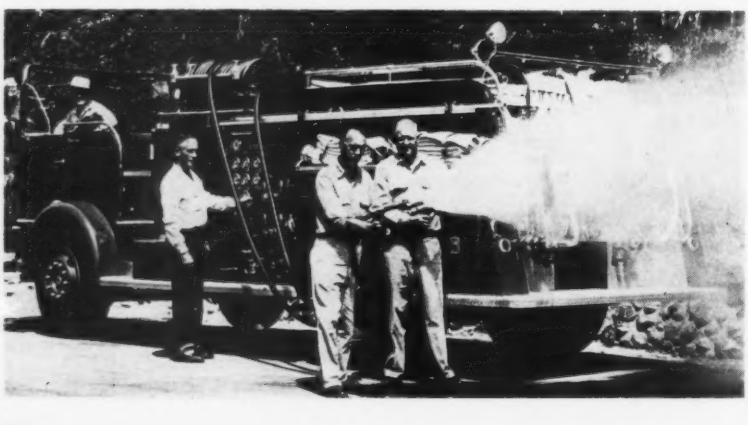
All operations of the firm's Communication Products Department, now located in four New York State cities, will eventually be moved to a facility in Lynchburg which was built in 1956 for production of rectifier equipments and components. The manufacture of rectifier equipments will be transferred to an existing General Electric location in Philadelphia.

A definite timetable has not been established, but the company announced that the moves would begin as soon as detailed planning is completed. They will take place gradually over a period of several months.

High Pressure Pumper for California Research Laboratory

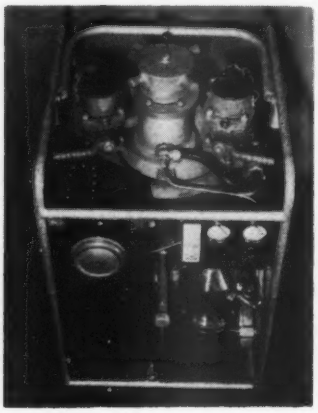
California Institute of Technology's Jet Propulsion Laboratory, Pasadena, Calif., has taken delivery of a new Crown fire truck which incorporates the latest types of fire fighting equipment to protect its 80-acre facility, including 108 buildings and 2,200 workers.

The 1,250-gpm pumper features a high pressure pump operated by power take-off, manufactured by the High Fog Pump Company, 225 South Rosemead Boulevard, Pasadena, Calif. JPL Fire Chief Jack Lawless feels the new piece of high pressure equipment will enable him to handle any type of fire within the laboratory grounds.



Portable Turbine Pump

Curtiss-Wright Corporation, Utica Division, 50500 Mound Road, Utica, Mich., announces its "Rover" gas turbine-driven portable pumping unit. Its rated



engine power is 60 bhp at 60° F. Operating on gasoline, kerosene, diesel or any distillate fuel, the pump will deliver 600 gpm with 10-foot static lift and 100-psi pressure. Suction diameter is 4 inches and discharge, 2½ inches.

New Nozzles and Shut-Off

Akron Brass Co., Inc., Wooster, Ohio, announces its Imperial nozzle, engineered for matching eductors, for producing foam, fog or wet water. It comes in 2½, 1½ and 1-inch sizes. Dual gallonage is available by depressing and half-turning baffle.

The Imperial is a break-apart nozzle when teamed with Akron's Gizmo, a compact shut-off that works easily under highest pressures, either just below the nozzle or anywhere in the hose line.

Literature Available

A new illustrated six-page brochure, "Scott Demand Inhalators," describing Type A and Type B oxygen inhalators and accessories may be obtained from the **Scott Aviation Corp.**, 215 Erie Street, Lancaster, N. H.

Minnesota Mining and Manufacturing Co., New Products Division, 367 Grove Street, St. Paul 6, Minn., has published four bulletins (No. 1 through No. 4) on

Continued on page 970

FIREFIGHTERS TELL US

Sustaining Member

"We Specify HANNAY® Fire Hose Reels

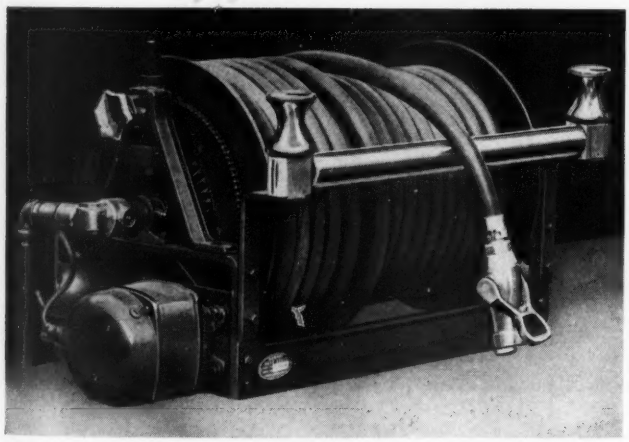
because

. . . their smooth operation assures instant operation at the scene of a fire . . ."

". . . on front line fire equipment only the best time tested and proven equipment should be used . . ."

". . . they are built to take a beating . . ."

". . . I want dependable and efficient service UNDER ALL CONDITIONS . . ."



Hannay **explosion-proof electric motor rewind reel with auxiliary vertical crank rewind and chrome roller assembly.**

There are many different reasons why *HANNAY* Fire Hose Reels are accepted as the finest by firefighters everywhere. Ruggedness, dependability, ease of operation, leak-proof swing joints, outstanding features are among the most mentioned. However, it all goes back to the fact that they are designed and built by active firemen who put into these Fire Hose Reels first-hand knowledge gained through firefighting service. Be sure you get everything you want in your Fire Hose Reels.

***For every type of firefighting equipment Specify* HANNAY®**

...Greatest Name in Hose Reels

© 1957 C.B.H.&S., INC.

HANNAY®

CLIFFORD B. HANNAY & SON, INC.

Westerlo, New York

AKRON BRASS
FIRE FIGHTING EQUIPMENT

FINEST NOZZLE EVER MADE....

DUAL GALLONAGE

Two gallonages from *one* Imperial nozzle, just by depressing the baffle and giving it one quarter turn! Conserves water, reduces water damage, gives you the versatility of two nozzles at the end of your line *without shutting down*. This easy quarter-twist changes the 1½" Imperial from 95 GPM to 60 GPM, changes the 2½" Imperial from 240 GPM to 120 GPM.

TURNS EASILY AT ANY PRESSURE

CONSTANT GALLONAGE

— GPM is always the same, no matter what the setting. Straight stream, narrow or wide fog — all the same gallonage. There's no fluctuating pump pressure, no varying back pressure.

BEST FOG and STRAIGHT STREAM

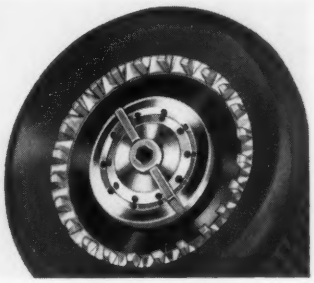
of any fog nozzle. Impinging high-velocity center cone jets give a solid, far reaching fog. Full gallonage straight stream reaches farther with water gallonage at full rated capacity of the nozzle.

COMPACT, LIGHTWEIGHT, EASIER TO USE!

at 100 P.S.I. Nozzle Pressure

Style	Size	GPM	List Price	
			PB	CP
710-R*	1"	23	77.65	82.05
715	1½"	95-60	84.55	88.95
715-R	1½"	95-60	84.55	88.95
725	2½"	240-120	106.85	112.35
725-R	2½" for dir. con.	240-120	106.85	112.35
729	2½" for P.P.**	240-120	91.65	99.15
729-R	2½" for P.P.	240-120	91.65	99.15
749	2½" with P.P.	240-120	116.75	130.50
749-R	2½" with P.P.	240-120	116.75	130.50

*Right Base **Play Pipe



DUAL GALLONAGE

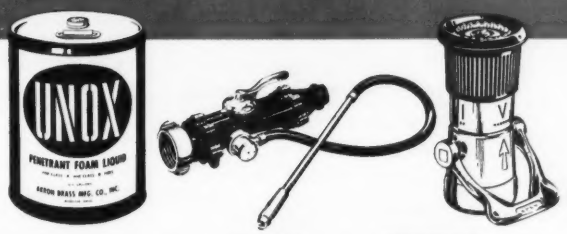
Choice of two water rates from one nozzle — depress and ¼ turn baffle in either direction to get lower gallonage — another ¼ turn and you return to full gallonage.

IMPERIAL®

WATER LUBRICATED — Works easily at all pressures, *never* needs grease. Efficient ball shut-off is water lubricated.

SMALLER, LIGHTER, TOUGHER — The materials used in the IMPERIAL have been carefully engineered to reduce weight and size without sacrifice of strength or capacity. The result — one lighter, tougher, easier-to-use nozzle.

FOG–FOAM–WET WATER — First nozzle engineered with matching eductors for production of foam, wet water or fog in all degrees of pattern and straight stream . . . all without changing nozzles or shutting down. Produces foam or wet water at all settings.



UNOX® + AKRON EDUCTOR + IMPERIAL NOZZLE

MODERNIZE WITH FOAM — GET THIS AKRON TEAM

For tougher, quick-acting foam or wet water. 1,000 gallons of water will produce up to 10,000 gallons of fire-fighting foam with UNOX®. Akron nozzles and Akron eductors are perfectly matched.

Akron Brass Mfg. Company, Inc., Wooster, Ohio

Questions and Answers

wherein are answered questions relating to current problems in the fire protection

Radiation Detection

To The Editor:

In the article "Instruments To Ferret Out Hidden Fire and Explosion Hazards," in the August issue, the Geiger counter and the Ion Chamber are mentioned as radiation survey meters. Are these the only types available?

H.P.

Answer: The *"Scintillation"* counter or detector was inadvertently omitted from the article. This instrument takes its name from the phenomena of fluorescense exhibited by certain substances when exposed to radiation. Among these are zinc sulphide, sodium iodide and calcium tungstate.

When a particle of radiation strikes a crystal phosphor of one of these substances a flash or "scintilla" of light is produced. These minute flashes may be converted to electrical energy by means of a photo-multiplier tube, a type of photo-electric cell which amplifies the impulses electronically, and passed on to an amplifier-counter circuit similar to that used in a Geiger counter.

The unit may be used to detect alpha, beta or gamma radiation, depending upon the type of crystal material employed in the probe. Scintillators are more sensitive than Geiger counters and may be used to measure both rate and strength of emission.

Storage Tank Explosion

To The Editor:

In the article "How Con Edison Trains Its Personnel . . ." by W. E. Rossnagel, August 1958, a statement is made: "A gasoline storage tank always has a too-rich-to-burn mixture above the liquid, except when being rapidly emptied, or possibly during a sudden thunder storm." What are the reasons for the condition?

N.B.

Answer: Mr. Rossnagel states the condition is caused by additional air being drawn into the tank possibly diluting the mixture until it is within the explosive range. This is readily apparent when the tank is being emptied. When a sudden storm is the cause, it is due to the drop in barometric pressure and temperature. Again additional air is drawn in. If lightning strikes the tank, induced currents may cause arcing between the interior framework and the metal skin of the reservoir and an explosion may result.

Comparing Friction Loss

To The Editor:

Which of the following layouts with the same water flow will have the least amount of friction loss?

A. A line of 3½-inch hose 2000 feet in length wyed into three 2½-inch lines, each 1000 feet in length.

B. A line of 3½-inch hose 1000 feet in length wyed into three 2½-inch lines each 2000 feet in length.

W.B.L.

Answer: Reduce each layout to an equivalent length of 2½-inch hose by the use of factors. The shortest layout will have the least friction loss for a given flow. The factor for 3½-inch hose is 5.8. The factor for three 2½-inch lines is 7.75.

A. $\frac{2000}{5.8}+\frac{1000}{7.75}=344.8+129=473.8$

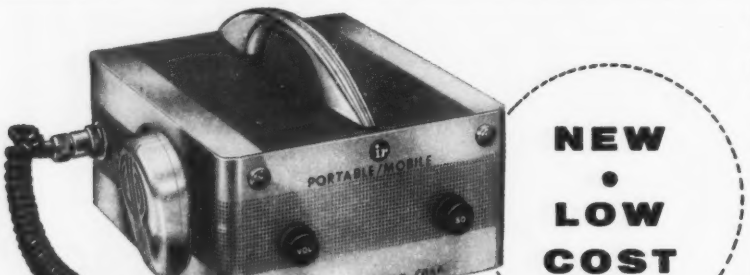
B. $\frac{1000}{5.8}+\frac{2000}{7.75}=172.4+258=430.4$

"*B*" is therefore the answer.

An alternate method which may be used to check the previous answer is to assume a quantity of water flowing and then find the friction loss for each line.

Assume 600 gpm flow. Using NBFU friction loss tables, it is found that such a flow creates 13.4 psi friction loss per 100 feet in 3½-inch hose.

The 600 gpm flow is divided equally between the three 2½-inch lines or 200



NEW • LOW COST

2-WAY RADIO
can be installed in
ONE MINUTE

Temporary installation of 2-way radio in any car for emergencies or during heavy traffic load periods can be accomplished with the new Industrial Radio Portable/Mobile in 60 seconds.

The Portable/Mobile is a completely new design to meet the combined problems of reducing the cost of radio communication and the ability to transfer equipment quickly from one vehicle to another by unskilled personnel.

The Portable/Mobile is the newest product of the manufacturers of the famous Pak-Fone Portable and the powerful Volunteer Communication Receiver, both in wide use in Public Safety Services and in industry.

Nationwide Sales and Service

More Features Than Mobile Units Costing Half Again As Much!

- Transistorized Power Supply
- Powerful Transmitter and Sensitive Receiver in One Compact Self-Contained Unit
- One Minute Installation
- Low Battery Drain
- Attractive Chrome Plated Steel Case

See your local Industrial Radio Dealer or write for complete technical data

INDUSTRIAL ir RADIO CORP.

462 N. Parkside Ave., Chicago 44, Illinois

gpm in each line. This causes 10.1 psi per 100 feet. Since the lines are equal and parallel it is only necessary to solve for a single line to find an answer.

A. $13.4 \times 20 = 268$
$10.1 \times 10 = 101$
369 psi

B. $13.4 \times 10 = 134$
$10.1 \times 20 = 202$
336 psi

When a comparison is made, the answer is obviously 'B'. □□

Spectator Killed, Dozen Injured at Fire Contest

An elderly man was killed on August 22 and 12 other persons injured at Amsterdam, N. Y., when a contest "racer" veered out of control and careened off the course during competition at the 86th Annual Drill Tournament of the Firemen's Association of the State of New York. The speed wagon, a stripped-down unit operated by the "Rough Riders," competition team of the Atlantic Steamer Company, Oyster Bay, L. I., N. Y., Fire Department, was laying hose during a high-speed hose contest.

According to reports, the brakes failed half-way down the track when a hydraulic line to the left rear wheel broke. The driver shouted and waved to warn the crowd and swerved into what appeared to be an opening in the ranks of spectators near the end of the track. The truck crashed through a 6-foot wire mesh fence at a reported speed of 40 mph, and into the scrambling onlookers.

The dead man, Fred Biege, 67, of Cranesville, N. Y., apparently froze on the spot and was struck full force by the careening racer. Four other persons, including two children, were injured seriously enough to be taken to the hospital. One of the five firemen, riding the vehicle at the time, was also hospitalized. The driver, Fireman Wilbur Young, suffered shock but was not otherwise injured.

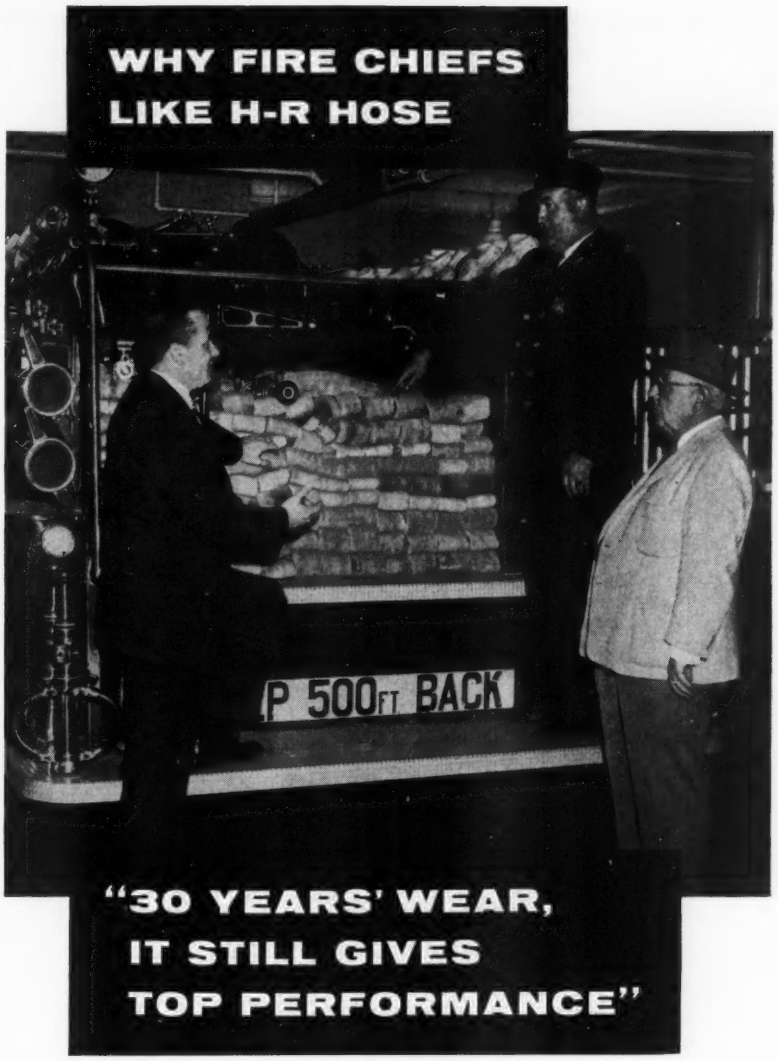
The "Rough Riders" had participated in three events previous to the ill-fated motor hose contest and were leading the tournament at the time.

Damage Suits Aftermath of New Haven Explosion

Damages totaling some $300,000 are being sought by victims of a spectacular explosion which occurred in New Haven, Conn., in 1957.

On July 23 of that year a tractor-trailer truck stopped to avoid hitting a dog, causing a heavy fork-lift truck on the trailer to shift, pinning a man in the tractor cab. A large crowd gathered to watch. Gasoline from the truck exploded, injuring some 70 onlookers.

Defendants named in the suits are the City of New Haven, the fire and police chiefs, the owner of the truck, the driver and the shipper.



"Its performance speaks for itself," says Chief Raymond J. Kropp of the City of North Tonawanda, New York, Fire Department. "Some of our Hewitt-Robins hose has been in use for more than 30 years."

Above, H-R sales representative W. G. Loney looks on as Chief Kropp tells Carl Unger (left), Manager Fire Hose Sales, Hewitt Rubber Division, "H-R hose is a must in our specifications. We have the highest regard for H-R hose; we've used it almost exclusively since 1918."

You'll find the performance of this hose pays off, too. Because Hewitt-Robins manufactures *all* types of municipal and industrial fire hose to the highest possible standards of quality, it *pays* to specify Hewitt-Robins.

HR HEWITT-ROBINS

Stamford, Connecticut

HEWITT RUBBER DIVISION, 240 KENSINGTON AVENUE, BUFFALO 5, NEW YORK

What's Burning

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from August 19th to September 19th.

Birmingham, Ala.—Brighton Negro High School damaged. Arson suspected.
Barrow, Alaska—Alaska National Guard Armory destroyed.
Helena, Ark.—Joyner's Department Store and Ben Franklin Store destroyed; Stephen's Department Store, Mid South Gas Co. and Twin City Beauty Salon damaged.
Searcy, Ark.—Vocational Agricultural Building of Searcy High School damaged.
Texarkana, Ark.—Texas & Pacific Railroad Shops, including 23 cars extensively damaged.
Arcadia, Calif.—Santa Anita Race Track damaged.
Malibou, Calif.—Dwelling of football star Ronnie Knox destroyed. Defective wiring.
Marysville, Calif.—Ostrom Lumber Co. planning mill damaged.
Oakland, Calif.—Mary MacKay Fashions warehouse and adjoining dwelling of Lawrence Barton damaged.
San Francisco, Calif.—Building housing garage, gas station and storage area at Treasure Island Navy Base damaged.
San Francisco, Calif.—Howard C. Greene Auto Parts Co. plant and store damaged.
San Mateo, Calif.—Gartin Lumber Co. badly damaged.
Sonoma, Calif.—Empire Laminators, plywood firm, damaged.
Sonora, Calif.—Sonora Ice and Cold Storage plant and Mid-Valley Wholesale Grocery warehouse damaged.
Tracy, Calif.—Exploratory oil well on Durham Ferry Road extensively damaged.
Portland, Conn.—Storage shed-workshop at Portland Marine Service and several cruisers destroyed or damaged.
Salisbury, Conn.—Barn on Gus Durst farm destroyed.
Reading, Del.—Samstra Lumber Co. damaged.
Jacksonville, Fla.—Abood's Steer Room damaged. Broken valve in gas stove.
Mount Dora, Fla.—Citrus Culture Corp.'s fertilizer plant destroyed.
Tampa, Fla.—Tampa Wholesale Products Market damaged.
West Palm Beach, Fla.—State Farmers Market, housing over 100 stores, destroyed.
Atlanta, Ga.—Six business establishments, all housed in a two-story structure, destroyed.
Augusta, Ga.—The H & S Transfer Co. and approximately $100,000 worth of stored furniture and rear portion of a nearby wrecking company destroyed.
Augusta, Ga.—Phoenix Oil Co. plant destroyed.
Bainbridge, Ga.—Georgia Factory For The Blind heavily damaged.
Dublin, Ga.—Dublin Elk's Club destroyed.
Macon, Ga.—Harris Paper Co. building destroyed.
Savannah, Ga.—Masonic Temple building on West Liberty Street and vacant apartment dwelling damaged.
Swainsboro, Ga.—Four turpentine-filled tanks at Standard Processing Co. and 500 barrels of gum damaged. Explosion.
Trenton, Ga.—John L. Case Building housing Case & Tatum Hardware Co. and James C. Case General Store destroyed; adjoining buildings damaged.
Valdosta, Ga.—Charlie Day Tobacco Warehouse and dwelling destroyed; other dwellings damaged.
Fenn, Idaho—Union Warehouse and Supply destroyed.
Haley, Idaho—Apache Crushing Hill destroyed. Brush fire.
Nampa, Idaho—Majestic Theater destroyed.
Pekin, Ill.—Cohen Furniture Store and Seibert Electrical Store damaged.
Rockton, Ill.—Rockton Felt & Paperboard Co. yards damaged.
Springfield, Ill.—Tessell Furniture Store destroyed; Barney's Store and apartment damaged.
Kingsford Heights, Ind.—Fifteen room schoolhouse and auditorium destroyed.
Belfast, Me.—One hundred-year-old Colonial Inn, four-story 35 room wooden hotel, destroyed.
Ellsworth, Me.—Ellsworth Building Supply Co. warehouses, schoolhouse and several dwellings destroyed or damaged.
Oquossoc, Me.—Mooselookmeguntic House destroyed.
Baltimore, Md.—Mansion on former Besche Estate, housing Maryland Province Society of Jesus, heavily damaged.
Baltimore, Md.—Vaneiff-Drayer Co. warehouse badly damaged.
Cumberland, Md.—Aircraft maintenance building at Cumberland Municipal Airport destroyed. Explosions.
Farmington, Md.—Barn and silo on Frank Delp farm destroyed. Lightning.
Rockville, Md.—Office building at rear of County Building damaged.
Boston, Mass.—Apartment dwelling at 18 Lithgow Street destroyed; apartment dwelling at 22 and 377 to 383 Talbot Avenue damaged.
Chicopee, Mass.—Building at Fisk Tire Plant of U. S. Rubber damaged. Static spark from contour grinding machine.
Lenox, Mass.—Windsor Mountain School building housing dormitory and workshop destroyed.
Nahant, Mass.—The Fay House destroyed.
Algonac, Mich.—Dwelling owned by Roger Quinn and Valentine Kasmir destroyed.
Bad Axe, Mich.—Barn on August Mazure farm destroyed. Lightning.
Fenton, Mich.—Pointview Tavern and bar equipment destroyed.
Frankfort, Mich.—Frankfort Methodist Church damaged.
Jonesville, Mich.—Barn on Franklin Norris dairy farm destroyed. Hay blower gas tank exploded.
Mahnomen, Minn.—First Lutheran Church damaged.

Approved by Underwriters' Laboratories, Inc., *and The Associated Factory Mutual Fire Insurance Companies

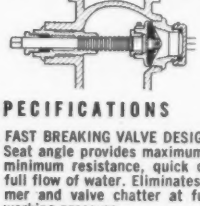
*No. 74, 75 and 76

Engineers agree...

GREENBERG
California type
HYDRANTS
are preferred everywhere!

The most widely preferred design throughout the Western States, Panama, South America, Hawaii, the Philippines, South Pacific and Saudi Arabia. These improved hydrants have received the endorsement of fire chiefs, waterworks superintendents and engineers everywhere.

We also manufacture a complete line of industrial and maritime bronze valves and fittings, plumbing specialties, hose goods, hardware, plaques, tablets and letters.



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- FAST BREAKING VALVE DESIGN
  Seat angle provides maximum efficiency, minimum resistance, quick opening and full flow of water. Eliminates water hammer and valve chatter at full 200 lbs. working pressure.
- Independent valve for each outlet
- Full 6½" waterway
- Curved deflector head—assures full pressure by reducing friction.
- Simple construction. All bronze working parts and heavy cast iron body give long, trouble-free service.

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BRONZE PRODUCTS
by M. GREENBERG'S SONS
765 Folsom St. • San Francisco, Calif. • EXbrook 2-3143
Offices in Principal Cities throughout the United States

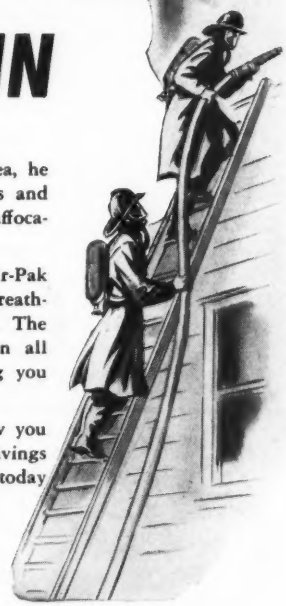
Kansas City, Mo.—Dwelling of Don L. Intrater damaged.
St. Louis, Mo.—Evans and Howard Sewer Pipe Co. building destroyed.
Billings, Mont.—Great Northern Railway Co. destroyed. Lightning.
Philipsburg, Mont.—Historic Granite Bi-Metallic Mine in ghost town of Granite destroyed.
Scottsbluff, Neb.—Scottsbluff High School consiederably damaged.
Lebanon, N. J.—Barn on Emil Gottlieb farm destroyed.
Millville, N. J.—Packing plant of April Brothers Orchards damaged.
Newark, N. J.—Atlas Screw & Specialty Corp. badly damaged.
Paterson, N. J.—Building occupied by Gross Furniture Co. destroyed.
Paterson, N. J.—Building housing Curbit Truck Service, Inc., damaged.
Cohoes, N. Y.—Seven apartment dwellings bounded by Oneida, St. John, Mohawk and Remsen Streets destroyed.
Hamilton, N. Y.—New York Telephone Co. damaged.
Staten Island, N. Y.—G. Albano & Co., manufacturers and dealers in ladies' dresses and Barton Lyons, manufacturers of paper novelties, considerably damaged.
Ansonville, N. C.—Ansonville Lumber Co. planer and repair shop destroyed.
Hickory, N. C.—North Hickory Dyeing and Processing Co. heavily damaged. Short circuit.
High Point, N. C.—High Point Chemical Mfg. Co. heavily damaged.
Lexington, N. C.—Warehouse-machine shop-office building of Miller Lumber Co. destroyed.
Wadesboro, N. C.—Deep Creek School building destroyed. Arson suspected.
Bethany, Ohio—Butler Mfg. Co., mattress frame plant, destroyed. Paint thinner ignited.
Port Clinton, Ohio—Storage warehouse of Celotex Corp. damaged.
Toledo, Ohio—Epworth Methodist Church damaged. Possible arson.
Toledo, Ohio—Main building of South Side Lumber & Supply Co. destroyed.
Warren, Ohio—S. S. Kresge Co. store in Trumball Shopping Plaza damaged.
Youngstown, Ohio—Coke plant at Campbell Works of Youngstown Sheet and Tube Co. damaged. Lightning ignited gas.
Davis, Okla.—Ellsworth No. 3 oil well of Arthur Ramsey Petroleum Co. and equipment of J & N Service destroyed or damaged.
Oklahoma City, Okla.—Rahil's Food Store damaged.
Albany, Ore.—Oregon Electric Railroad depot cars and Oregon Egg Producers warehouse destroyed. Bonfire.
Ashland, Ore.—Oregon Warehouse destroyed.
Burns, Ore.—Crane Motel-Cafe destroyed.
Monroe, Ore.—Monroe Feed & Seed store destroyed.
Portland, Ore.—Old Firemen Building destroyed.
Portland, Ore.—Water Way Terminals Co. dock machinery, elevators, destroyed. Welding spark.
Springfield, Ore.—Allen Oil Co. plant destroyed. Explosion.
Springfield, Ore.—Custom Lumber Co. destroyed.
Bristol Borough, Pa.—Keystone Hotel damaged.
Croydon, Pa.—Railroad Specialties Corp. plant destroyed.
Croydon, Pa.—Vacant mansion on Jones Lane heavily damaged. Arson suspected.
Mechanicsburg, Pa.—Eberly Lumber Co. warehouse destroyed.
Middletown, Pa.—Boys' dormitory at Elwyn Training School heavily damaged.
Muhlenbert Township, Pa.—Dalecraft & Co. heavily damaged.
Reading, Pa.—Columbia Paper Mill badly damaged. Arson.
Reading, Pa.—Graff Brothers Trading Co. scrap yard heavily damaged. Arson suspected.
High Point, S. C.—Southern Seating Co. heavily damaged. Spontaneous ignition.
Pedee, S. C.—Horne's Novelty and Tourist Shop destroyed. Defective wiring.
Salley, S. C.—Warehouse of Briggs and Lin J. Salley destroyed.
Walterboro, S. C.—Walterboro Air Base building, housing F. W. Harrison & Son, Inc., basket plant and R. C. Motor Lines, destroyed.
Knoxville, Tenn.—Two tanker trucks and equipment at Esso Standard Oil Co. terminal damaged. Explosion caused by gasoline being spewed from broken hose into truck exhaust pipe.

Please turn page

Every time a fire-fighter enters a smoke filled area, he stakes his life against hazards of chemical fumes and poisonous gases. Even dense smoke may cause suffocation and death.

But there is a sure way to win! Wear a Scott Air-Pak and whatever the breathing hazard, you will be breathing cool, fresh air regardless of the atmosphere. The SCOTTORAMIC Mask gives unlimited vision in all directions. It doubles your protection by keeping you out of danger zones.

Is your fire company Scott equipped? Let us show you how little it costs. You'll be amazed at the annual savings over other types of breathing equipment. Write us today or contact your nearest Scott Distributor.



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At the International Fire Chiefs' Convention...

Hundreds Visited the Cornelius Exhibit

"Simple to operate." "The finest piece of equipment in our department." "When will you be accepting orders on the new, larger unit?" These were typical comments and questions voiced by visitors at the Cornelius Booth in Los Angeles. The Chiefs really did get the message from the smoke signals, and discovered the economical way to produce unlimited quantities of pure, fresh compressed air.

Cornelius compressors fill air tanks in minutes, allowing every man in your department to become familiar with demand breathing equipment. You can hold periodic refresher drills without the fear of not having full tanks when a real emergency requires them.

As pioneers in the field of portable air compressors for breathing, the Cornelius compressor has been designed to meet *your* requirements and fulfill *your* needs. See your fire equipment distributor for a free demonstration or write for our catalog.

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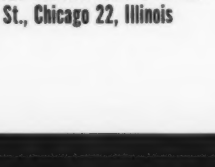
CHIEFS...

Reach your key men instantly with All-Transistor



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IMPORTANT FEATURES: All-Transistor. FM. Crystal controlled. Available in your fire frequencies. Range up to ½ mile. Radio receiver built into your own helmet. Simple to operate. Ready for instant use. Equipped with antenna, battery, speaker or earphone. Weighs only 11 ounces. Sturdy construction.

Specialists in electronic research and manufacturing of fire equipment.

Write, wire, or phone for information

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856 North Rockwell St., Chicago 22, Illinois

Memphis, Tenn.—Air Temperatures Inc. heavily damaged.
Oakdale, Tenn.—Grocery stores of L. Y. Yangley and W. L. Headrick, Boy Scout Center and vacant building destroyed. Southern Bell Telephone & Telegraph Co., First Methodist Church and several buildings damaged.
Dallas, Tex.—Texas Paint & Wallpaper Co. destroyed; Herald Cleaning Co. damaged.
Dallas, Tex.—Varel Mfg. Co. building destroyed.
Houston, Tex.—Trinity Episcopal Church damaged.
Houston, Tex.—Unit of Celanese Corp. of America heavily damaged.
Snyder, Tex.—Owens Department Store, adjoining theatre and drug store damaged. Lightning.
Ferram, Va.—One building at George Jamison's planing mill destroyed; another heavily damaged.
Parkersburg, Va.—Three-story business building heavily damaged. Explosion in dental laboratory.
Virginia Beach, Va.—Eight show horses and a stable destroyed.
Centralia, Wash.—Don's Sausage Co. destroyed.
Enumclaw, Wash.—Garrett-Emry Buick Co. destroyed. Bottled gas explosion.
Moxee, Wash.—McKelheer Hop Kiln destroyed.
Seattle, Wash.—Hollywood Hotel destroyed. Reported arson.
Sedro Wooley, Wash.—Willis Rogers & Pearson plant destroyed. Crane spark.
Spokane, Wash.—Estell Forkner's dwelling and barns destroyed. Tractor sparks.
Stanwood, Wash.—Hamilton Planing Mill destroyed.
Toppenish, Wash.—Barney Cannery destroyed.
Vancouver, Wash.—Sulz Restaurant destroyed. Careless smoking.
Oshawa, Ont.—F. W. Woolworth Co. store destroyed; Pattenick's Ladies' Wear Shop; Canning's Ltd. Men's Wear; Morrison's Ladies' Wear; R. B. Reed & Sons, florists; Kinloch's Men's Wear; Berg's Ladies' Wear; Oden Restaurant; I.O.O.F. Hall and apartments, damaged.
Rossport, Ont.—Department of Lands and Forest Research Board building, used for research in combatting the lamprey menace that is depleting Lake Superior trout, destroyed.
Toronto, Ont.—Storage shed of Northern Fuel Co. destroyed. □□

August Fire Losses

Estimated fire losses in the United States during August amounted to $75,491,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $75,491,000 loss represents a decrease of 3.7 per cent from losses of $78,364,000 reported for August 1957, and a decrease of 6.5 per cent from losses of $80,782,000 for last July.

Losses for the first eight months of 1958 now total $737,508,000, an increase of 4.4 per cent over the first eight months of 1957, when they amounted to $706,333,000.

These estimated losses include an allowance for uninsured and unreported losses.

NBFU Lists Fire Loss Data

The National Board of Fire Underwriters has reported that 505 fires, which individually destroyed $100,000 or more in property, were responsible for $144,500,000 in losses during 1957. This is about one-seventh of the grand total of $1,023,190,000 for all causes. In addition, farm fires accounted for $152,000,000 during the year.

World-Wide Fire News

Town Becomes Potential "Molotov Cocktail"

Three persons were killed, several injured, and over 200 persons were forced to evacuate their homes in Moheda, Sweden, July 23, when an explosion wrecked a mountain fuel depot and sent millions of gallons of gasoline cascading through the town's streets and sewers. The community of 3,000 was turned into a gigantic potential "Molotov cocktail."

All the dead were employed in the underground storage dump. The cause was not immediately determined, but the possibility of sabotage was not ruled out.

Troops and police hurriedly evacuated families on the outskirts of the town nearest the flood, and erected sandbag barriers to stem the flow of high octane gasoline from the dump which is carved into the mountain overlooking Moheda.

Firemen, working with soldiers "hip deep" in the gasoline, tried to divert the flood away from the town by trenching and sandbagging. Some fuel was channeled into a nearby lake; some pools were pumped into empty tank cars.

Officials cut off all power in the town, while the military and police patrolled the streets to enforce a ban on smoking, fires of all kinds, use of autos and anything else that might spark a blast.

Buried Hydrant Brings Fine

Two men were recently fined one pound each in Cambridgeshire, England, for obstructing a hydrant. Seems the local forces arrived at the scene of a fire in Bassingbourn and couldn't readily locate the hydrant known to be in the vicinity. The two defendants had piled 150 bricks around the "plug," completely hiding it from view.

From the World News Ticker

A one-hour fire on September 1, damaged the two top floors of the four-story Coosum Hotel, Seoul, Korea, which serves as a U. S. Army club and officers quarters. . . . One of the most serious fires to occur in the Brussel's World's Fair badly damaged the "Hawaiian Village," one of the Fair's gayest spots. Blamed on an electrical short, the fire swept through the thatched bamboo building occupying most of the 10,000-square-foot village which housed a dance hall, a bar and restaurant. Initial estimate of damage was $25,000. . . . When fire broke out August 29 in the main ventilating shaft of a mine in Zabrze, Southern Poland, 56 coal miners suffocated. Another 52 were hospitalized with gas poisoning. . . . At least 23 persons were killed and 13 injured when a firecracker factory in central Taiwan blew up August 27. Most of the victims were teenagers. Plant was working overtime

Sun-bathing?

It's a swell way to get a tan — BUT it's a helluva way to dry fire hose. In fact . . . drying hose in the sun is the surest way to curtail its life expectancy. **The sun bakes in contamination** and, just as the sun dries your skin, it **removes the natural oils from the cotton fibers and ages the rubber lining.**

Hose should ALWAYS be washed after using, then dried with proper hose conditioning equipment.

FIRE HOSE DRYER →

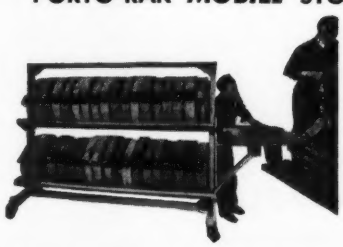
The patented, electrically operated Circul-Air hose dryer circulates prewarmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life. No other drying method is so fast — so economical — so easy to use. Circul-Air is the preferred dryer in over 5,000 leading Fire Departments.

ACCEPTED — APPROVED — RECOMMENDED

Approved by Underwriters' Laboratories . . . and Canadian Standards Association. Recommended by all leading fire hose manufacturers.

LABORATORIES APPROVED

PORTO-RAK *MOBILE* STORAGE AND LOADING UNIT



Saves valuable space. Holds 1800 ft. of 2½" hose — proportionately more of 1½" — in an 8 ft. space (when loading table is detached). Roll it right up to the truck for reloading — then out of the way when not in use. **Equipped with locking fiber-wheeled casters.**

NEW *Roto-Jet* HOSE WASHER AUTOMATICALLY WASHES — RINSES — DRAINS HOSE

Hose is self-propelled. Simple, one man operation. With or without detergents, ashes, dirt, mud and sludge are automatically scrubbed out and flushed away. Saves time. Lengthens hose life. Now . . . **with Foot Pedal Operation.**

Booklet (No. 5) "Fire Station Design" Now Available
Send For Your Copy Today

THE CIRCUL-AIR CORPORATION
575 EAST MILWAUKEE
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to produce toy atomic cannons. Blast shattered 10 neighboring houses. A schoolboy playing several blocks away was killed by flying bricks. . . . All crew members of the Costa Rican vessel Consha were saved when their ship burned and sank off England's west coast. Fire was caused by an engine room explosion. A British helicopter aided in the rescue work by a Navy ship. . . . 400 Marines, engaged in war games along the Southern California Coast, September 11–12, dropped their weapons for fire fighting gear to help control a hot brush fire which involved the northeastern part of Camp Pendelton and a section of the Cleveland National Forest about 18 miles east of Clemente, Calif. The fire covered 300 acres and brought into action, besides the Marines, State and Federal fire fighters and 50 Zuni Indian specialists. Three converted Navy TBM tanker planes and two converted PBY's also gave an assist. . . . Three crewmen and four residents were killed when a cargo plane crashed and exploded in a London suburb. The plane demolished two houses and sliced the tops off two others. . . . Christiansborg Castle, seat of the Danish Parliament in Copenhagen, was damaged by fire when someone smashed windows of the castle and threw burning oil-soaked cloths into the parliamentary printing plant. A watchman put out the fire. Police believe the arsonist may have been inspired by the recent confession of a 15-year-old boy that he set fires in nine buildings in Vejle. . . . Rioting convicts at Collins Bay Penitentiary near Kingston, Ontario, caused an estimated $65,000 damage when they set fire to five buildings. Three were destroyed and two badly damaged.

Australian Fireman Fined For Running Traffic Light

A Melbourne senior fireman recently was fined £3 for driving a fire appliance against traffic lights.

The fire brigade board later decided not to reimburse the fine and as a result all drivers were instructed by the union to adhere rigidly to traffic regulations.

It is understood the government is now considering certain alterations to the traffic laws to facilitate movement of fire vehicles. —*Melbourne Annual Report*

Army Aids Junior Rocketeers

The Army has set in motion a project to help amateur missilemen shoot off their rockets without blowing themselves up.

In August, instructions went to all commands for aiding amateur rocket clubs, missile and other scientific groups that experiment in rocketry. The primary objective is to help save amateur rocketeers from injuring or killing themselves and to prevent danger to others, including persons riding in airplanes.

No rocket firings under Army supervision will be permitted into airspace used by planes, according to the regulations. When amateur groups fire rockets on Army ranges, they must abide by a number of safety rules.

Bursa Blaze Costs Billion Lira

The conflagration which destroyed the heart of Bursa, Turkey, one-time capital of the Ottoman Empire, on August 24, did damage estimated at 1,000,000,000 lira (more than $110 million at the official rate of exchange).

Turkish police arrested a local bookbinder who said his shop caught fire on August 24, when papers were ignited by a kerosene lamp used to heat glue. Gavit Chenrek, the shopkeeper, said he hurried out for a pail of water. Unable to find any, he cried for help. By the time townsfolk began to gather, the whole shop in the covered market section was ablaze.

The fire spread rapidly before a brisk wind to destroy 2,200 small shops and other property before it was controlled. Four times during the night, fire threatened the 800-year-old Ula Cami (Great Mosque) but on each occasion, firemen were able to save the structure.

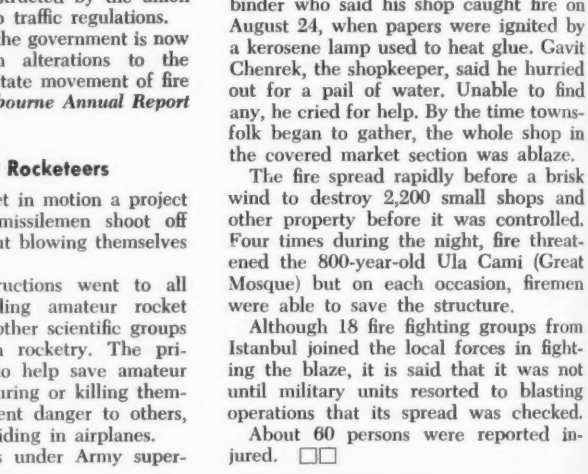
Although 18 fire fighting groups from Istanbul joined the local forces in fighting the blaze, it is said that it was not until military units resorted to blasting operations that its spread was checked.

About 60 persons were reported injured. □□

REVIV-A-LIFE®

RESUSCITATOR • INHALATOR • ASPIRATOR

featuring—**Baer model control valve—a patented one hand control valve to regulate resuscitation or inhalation. Change from resuscitation to inhalation and back is automatic.**

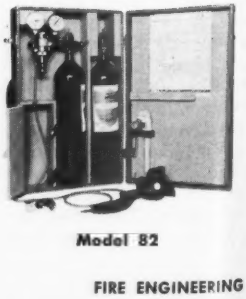


Model 192

SIMPLE—SAFE—DEPENDABLE

The Reviv-A-Life Resuscitator is an automatic breathing machine which will rhythmically inflate and deflate human lungs within medically approved limits . . . safely! It's lightweight—easy to carry—simple to use. The assembly is on removable panel for use in tight places. Improved Venturi Action eliminates spring and toggle mechanism . . . reduces maintenance. Aspirator ready for instant use.

AMBULANCE INHALATOR



Model 82

Oxequip O2

Numerous inhalator models available to meet every requirement. Sold through dealers and equipment manufacturers. Write for literature, prices and name of dealer.

OXYGEN EQUIPMENT & SERVICE CO.

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Among the Buffs

By Paul C. Ditzel

THIS COLUMN stands accused of lousing up the calendar of the Boston Sparks Association. Reports President Charles W. Asbrand and Executive Secretary John J. Campanella:

"The Association would like to thank Paul Ditzel for his anecdote regarding our interruptions during movies at our September and October meetings which was his 'Among the Buffs' column in the January issue of FIRE ENGINEERING.

"It caused quite a few chuckles around the clubroom, especially in view of what took place at our last meeting," says Association General Orders Number 3.

"We're not accusing Paul of putting a 'hex' on us but a few days after reading his article, we were gathered together for our monthly meeting and a box was struck at 8:27 p.m. before the start of the meeting. From that time, right up until the last two members left the clubroom at 2:45 a.m., the following morning, not another box was struck.

"We're not casting any furtive glances over California way yet, Paul, but it was quite a coincidence . . ."

But all was forgiven a month later when, reports the General Orders, there were 37 boxes struck between 3:30 and 11:30 p.m. during the association's meeting night.

In the interests of accuracy, we must report that this column's peculiar effect upon Boston buffs is shared by the Box 52 Association. Here's what happened not long ago:

The regular meeting had just gotten under way in the Old Boston room of the Parker House Hotel at 8:15 p.m., when Signal 8223–12 came in on the fire department radio. This was a mutual aid call to the nearby town of Dedham. It also happens to be the home town of the Box 52 Secretary, Carlisle Smith, who had left home about 30 minutes earlier and had been in the meeting room less than 10 minutes.

"Fortunately he had just completed the reading of his reports," says the Box 52 magazine, "so, begging the members' forgiveness, he was able to immediately race back to his 'Home Town' and view the local blazebusters do their stuff."

Four other Box 52'ers followed him to the fire: Charlie Curtaz, Al Nelson, and the column's intrepid correspondent, Jim Blomley, Esq. The faithful 31 who remained at the meeting heard an excellent talk on the mails from fellow member Bill Connell who is control assistant in the regional transfer office of the Boston Postal District. (Is that part of Uncle Samuel's mail service?)

The fire, it turns out, was in a two-and-one-half story wood business building with stores on the street floor at 396–402 Washington Street, opposite the Dedham Town Hall. Loss was set at $150,000. The building was 75 by 50 feet and seven persons escaped from their second floor apartment, four of them being helped through smoke-filled

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hallways by first-in Dedham firemen. The floors collapsed at the height of the fire, about 9:30 p.m., and flames shot 50 feet into the air. The all-out for Boston Box 8223 was sounded at 1:12 a.m.

"Thanks for the wonderful evening, Bill," says the Box 52 magazine, "but we are wondering what Paul Ditzel will think of this one."

Paul Ditzel thinks he better move to Boston if he wants to see a fire.

Here's an anecdote that I've been saving for some time and should be something of a collector's item for fire alarm record fans.

The famed Salem, Mass., Fire started on June 25, 1914 and lasted three days. It destroyed 1,800 buildings and caused losses in excess of a million. The all-out for the fire was not sent in until June 25, 1956—some 42 years later. Southworth Lancaster, editor of the *Register*, official newsletter of the Cambridge, Mass., Auxiliary Fire Department explains: "The answer seems to be that when the long fight ended, nobody was worrying about routine. Then when the omission was noticed, it was too late to make any difference."

Salem rebuilt and rehabilitated itself and in the course of the job it borrowed considerable sums of money. The last money due was repaid on June 25th, 1956, and city officials formally burned the note of indebtedness. At the same time a deputy chief sent the all-out which had been overlooked in 1914.

Another interesting anecdote of this historic fire concerns the mutual aid system in effect in those days. One of the towns sending help to Salem was Manchester which had a steamer, Seaside No. 2, purchased in 1902 and still a good piece of machinery, we're told.

However, the 12 miles of winding hill-and-dale highway between Manchester and Salem was too long a pull for horses, so the Manchester firemen commandeered a furniture van. They lashed the pole of the steamer to the back end of the van and rolled away. The panting van, the steamer wobbling along in its wake, must have been a sight for the Essex County folk. The horses went along, too, so as to provide motive power after arrival.

"Can You Top This?" asks the editor of the International Fire Buffs Association?

Paul Ditzel—who isn't about to go to Boston—sure can't and figures he'd better sign off now before somebody tops him again. Let's have some fresh reports from you buff club secretaries, lone wolf buffs, and Jack Corcoran and Charlie Farnham wherever you are. The address is simple: Box 8731, Crenshaw Station, Los Angeles 8, Calif. □□

Chemicals Fuel New Planes

Development work on two new aircraft and their engines indicates that the new F-108 interceptor and B-70 bomber will be powered by high-energy chemical fuel when they are completed. The new Air Force planes are designed to reach speeds in the 2,000-mph area.

PROPANE GAS EXPLOSIONS

Continued from page 927

radio appeal for help from Belleville's radio station WIBV.

About this time water company crews began opening fire hydrants at strategic high points since the source of the gas had not been found.

At 10:54 a.m., while still fighting the Abend Malt Shop fire, the fire fighters were notified of another explosion and fire in the home of Steve Renneker at 1819 West Main Street, directly opposite the first fire. The force of the explosion shattered glass on Engine 2's apparatus, still operating at the first fire. Three bedrooms were involved by the flash fire in the Renneker home. Booster lines were again used.

Water company crews opened more hydrants in the general locality. It was learned from St. Elizabeth's Hospital that two patients had been admitted, treated for burns and released.

At 11:21 a.m., the dispatcher notified fire fighters by radio of an explosion in the home of Mr. and Mrs. Carl Shannon at 2020 Roosevelt Avenue, approximately nine blocks from the first fire. Engine 1, Truck 1, Swansea's Engine 1, one reserve pumper, Assistant Chief Bruss and Chief Wade responded.

Finding only minor fire damage, Chief Wade instructed Assistant Chief Bruss to notify the residents of the area by means of a public address system permanently mounted on his car, to immediately shut off their main gas and water valves, open all windows and get outside or leave the area. Chief Wade made a similar appeal over Station WIBV.

Gas identified

Tests conducted for the Illinois Power Company at the Socony Mobil Oil Company showed that there was 82 per cent propane, 10 per cent ethane and 8 per cent air in the water. The problem was to locate the source from which the gas was entering the main.

The Illinois Power Company and Assistant Chief Bruss checked all large propane tanks in the area. One of three 1,000-gallon buried tanks at St. Mary's was found to have a slight valve leak.

Meanwhile J. Sauerwein of 38 Logan Alley, directly across from the St. Mary's propane tanks, reported pure gas flowing from his water faucets. Chief Wade and state fire officials investigated.

On removing the water meter and opening the valve, pure propane gas blew out. Engine Company 2 was called at once to block off and evacuate the area. The three 1,000-gallon tanks in the St. Mary's yard were ordered pumped out by Midwest Butane. It was later determined these tanks played no part in the emergency.

The pressure of gas in the water line was so great that tree limbs 12 feet above open hydrants were violently shaken. It took five to seven minutes before water flowed and, even after that, there were still gushes of gas.

Reports of gas odors continued until

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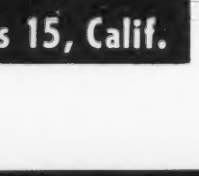

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3:25 a.m., July 25. All were investigated and found to be of a minor nature.

The search for the source of the gas continued on July 25. During the investigation, Chief Wade and Sergeant Richard J. Mercurio of the Belleville Police Department visited the Commercial Transport Inc. at South 20th Street and the Illinois Central Railroad tracks. A trailer tank truck used to haul liquefied petroleum gas was in the garage for repairs, and was in such position that it could have been connected to a nearby 2-inch water line.

Questioning revealed that on July 24, the garage foreman planned repairs to the tank truck. Since the work required welding, the foreman, as a safety measure, had a hose connected to the tank from the water line. After water was started, the foreman checked the valves on the truck and found that no water was entering the tank. He immediately shut down the water and disconnected the hose. Employees checked the water outlets in the garage but found no evidence of gas in the lines.

The tanker had a capacity of 8,136 liquid gallons. On July 18 it had been loaded with 6,915 gallons of propane and unloaded the same day. The truck was then returned to Commercial Transport's lot where it remained until July 21 when it was moved to the garage.

Company officials stated that the standard policy is to make repairs to the tank only after an examination, and that actually, welding was not required. The foreman connected the tank to the water line believing the water pressure would overcome the gas pressure in the tank. However, as the tank had been exposed to sunlight and heat, pressure within it had built up to an estimated 110 pounds. When Chief Wade and Sergeant Mercurio inspected the truck on July 25, the tank gauges indicated 95 pounds pressure. □□

The editors are grateful for the cooperation of Chief of Department John H. Wade, Belleville Fire Department, for the information on which this article was based.

Russia Stresses CD

The Federal government has disclosed that intelligence sources report Russia is pushing a widespread civil defense program including building H-bomb shelters and training five million workers a year. It added Russia now has "22 million well-trained civil defenders at its disposal—nearly 10 per cent of the population."

Oregon Range Fires Up

Fifty-seven fires in the Malheur county area of Oregon have burned over approximately 50,000 acres of range land including timber so far this year. This is twice as much as in the entire preceding fire year. The total is expected to increase even more as the fire year normally extends well into October.

FIRE IN THE SKY

Continued from page 932

met during operations. Direct radio contact with the street could not be maintained by portable radios in the shielded attic area. This was solved by using the 36th-floor terrace as a relay station.

The mask service unit replaced 24 all-service canisters depleted during operations.

Hooked and small extension ladders were brought to the upper floors in elevators after removing the escape hatches from the car ceilings.

In spite of the trying conditions, a well-organized relief program limited medical leaves to one. □□

The editors gratefully acknowledge the cooperation of Fire Commissioner Edward F. Cavanagh, Jr., Battalion Chief Alfred H. Eckert of the 9th Battalion, and Captain Woodrow H. Holdsworth, Engine Company 23, for the information upon which this article is based.

TOWNSHIP VOLUNTEERS

Continued from page 935

walls and floor with a metal ceiling overhead protecting the cockloft section. The "room" is about 8 x 10 feet and can be fully charged with fire and smoke. The men will actually fight hot, confined fires making use of protective masks and various hose streams; methods of ventilation can also be studied.

Other facilities in the training area include two 500-gallon tanks mounted at different levels for flammable liquid fires. Two 275-gallon drums are used to store flammable liquids on the premises. A bulkhead, or pier, enables pumpers to draft water from a spring-fed lake. It is planned to install a standpipe on this pier to feed water to a fire hydrant near the training building about 150 feet away.

Future plans also call for the addition of an auto or truck to be used in the training of motor vehicle fires; upright panels containing doors or windows for further forcible entry practices; and other innovations which will enable the volunteers to carry on a more extensive training program.

The distinctive training building was erected for slightly less than $11,000. The five volunteer fire companies (Abington, McKinley, Weldon, Edge Hill and Roslyn) donated $1,000 each toward the construction costs while the balance was paid by the township commissioners. Although the ground is owned by Abington Township, it was officially turned over to the fire department several years ago for training purposes.

The volunteers contributed quite a bit of their own efforts, time and money to clear and level the ground before construction actually began. Their first project was to make the lake deeper and to build the drafting pier. The cost of operation and training expenses will be borne by the five member companies, using money appropriated for this purpose.

The planning and designing of this

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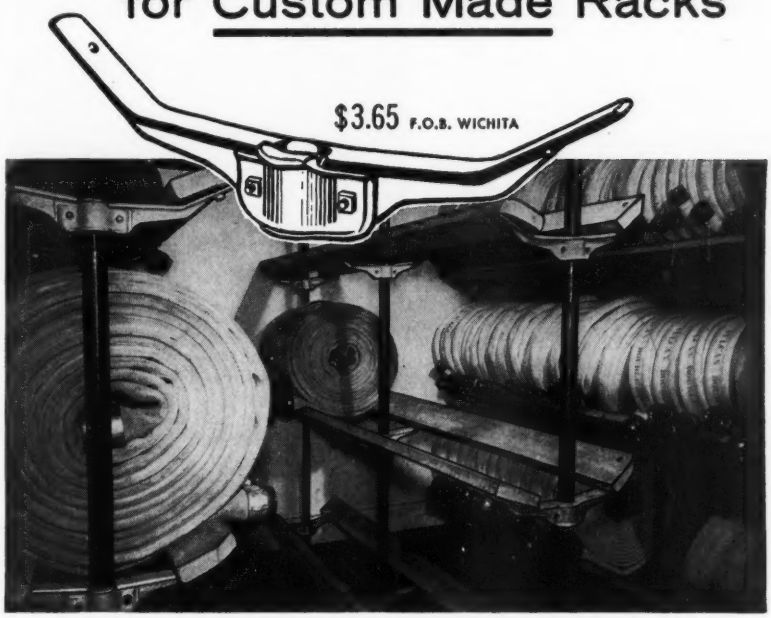

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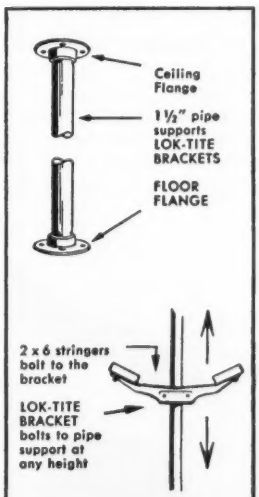
Lok-Tite fire hose brackets provide storage racks in odd dimension areas where ready-made storage will not fit. Encourage good housekeeping practices . . . assure easy hose inspection and correct ventilation by building sturdy storage with Lok-Tite brackets approved by hose manufacturers and fire departments everywhere.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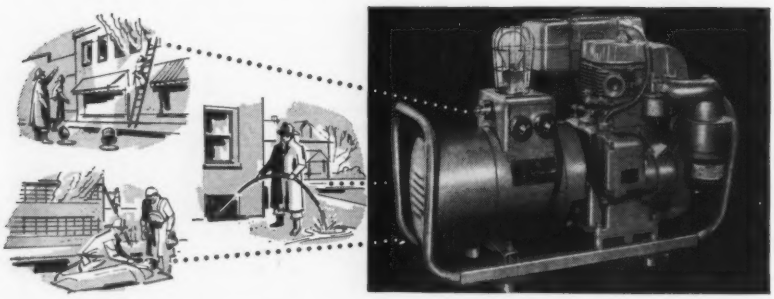

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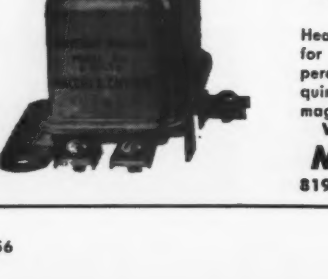

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training center was handled by the Chief's Committee of the Abington Township Firemen's Association. Operation of the area will be supervised by the association's Training and Education Committee. Some neighboring fire companies which work with the township units on a mutual aid agreement will also be offered the use of the training tower and other facilities at the fire school.

The area covered by the school measures approximately 375 by 400 feet, the lake taking up about one-third of this space. The training building was officially dedicated with appropriate ceremonies by township commissioners and fire department personnel on May 10 of this vear. The five member companies put on an hour-long show of fire fighting techniques for attending guests and public. □□

Three Cities to Disband Salvage Patrols

The Worcester Protective Department and the Chicago Fire Insurance Patrols have voted to cease operations on or before June 30, 1959, and the Underwriters Salvage Corps of Cincinnati has announced its intention to discontinue on or before the same date. The Boston Protective Department is studying a plan of discontinuance at this time.

The action taken in Chicago, Worcester and Cincinnati by the insurance companies follows similar steps taken in other cities including Baltimore, Duluth, Indianapolis, Kansas City, Louisville, Memphis, Milwaukee, Minneapolis, Newark, New Orleans, St. Louis, St. Paul and San Francisco.

West Milwaukee Publishes Baby Sitting Safety Tips

The West Milwaukee, Wis., Fire Department in cooperation with the local chamber of commerce has issued a pamphlet of safety information for baby sitting which defines the responsibilities of a baby sitter, and covers preparation for baby sitting, personal safety, fire safety, accident safety, and emergency first aid instructions. A "Preparation Information Sheet" is included.

Radiation Kits For New Jersey Schools

The Civil Defense Division of the State of New Jersey has begun distributing radiation detection kits to 160 of the high schools in the state. These are being made available by the Federal Office of Defense and Civilian Mobilization for teaching school children survival from atomic attack.

Each kit contains Geiger counters, radiological survey meters, dosimeters and a device for testing radiation contamination of food and water. Ultimately, it is planned to equip all high schools in the state as well as fire and police stations.

Annual Reports

Nairobi, Kenya Colony, Africa—Chief Fire Officer L. J. E. Baillargeon, reports 235 responses during 1957 as compared to 305 in 1956. The decrease is attributed to an unusually long rainy season and to fire prevention measures.

Province of Ontario—W. J. Scott, O.B.E., Q.C., Ontario Marshal reports in considerable detail on the 574 individual fire departments in the Province. A county mutual aid system was made possible by the standardization of Ontario fire hose threads, a joint Federal-Ontario project whereby all fire hose couplings and allied fittings were completely standardized as were hydrant operating nuts throughout the province. These standards have now been made mandatory by legislation.

California Fire Training Program—Thomas S. Ward, supervisor of fire training, reports staff participation in regional fire training conferences and instructional activities at 255 zone and departmental schools representing 474 departments, with 6,095 men registered for 5,017 class hours.

Milwaukee, Wis. Arson Detection Program—Fire Chief Edward E. Wischer and Police Chief Howard O. Johnson report on interrogation methods, scientific aids in arson and fire photography and other pertinent topics discussed at the 1958 Arson Seminar held under the joint sponsorship of the Milwaukee Fire and Police Departments.

Iowa State Training—Keith Royer, supervisor, Firemanship Training, Engineering Extension, Iowa State College, reports 4,703 of the state's 15,000 volunteer firemen registered in training classes during the fiscal year July 1, 1957 to June 30, 1958. Each man averaged more than eight hours of actual training for a grand total of 38,726 hours of instruction. The 34th Annual Fire School held during June registered 566 persons representing 149 Iowa communities and five other states. □□

Toy Rocket Auto Kills Jersey Boy

An 11-year-old New Jersey boy was killed recently when a homemade rocket, designed to propel a toy automobile, blew up in his face.

Merrill Poliakoff, 11, of Tenafly, and three companions had filled a 4-inch carbon dioxide cartridge, of a type used to charge soda water bottles, with a mixture of saltpeter, sulfur and charcoal. The crude rocket motor was then attached to the auto and a match used to ignite it.

The device exploded, driving bits of the car and cartridge into the boy's chest and shoulder. His companions were unhurt.

Get smoke out, get air in

with Multi-Purpose

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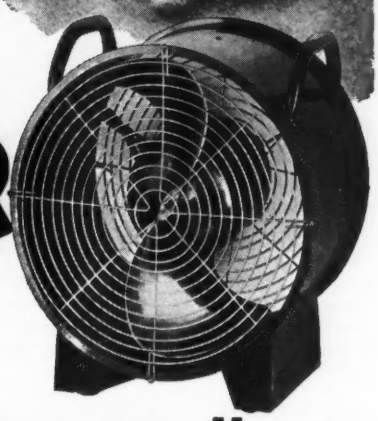

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★ **Highly portable... operates in any position**
★ **Design permits vertical stacking**
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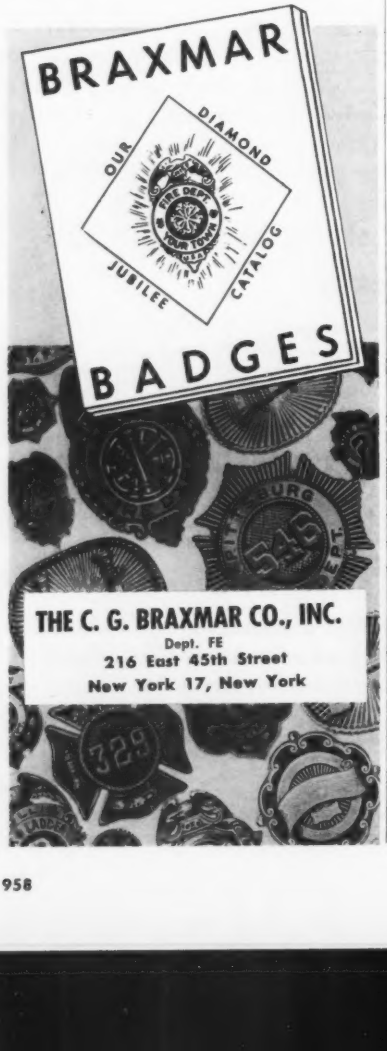

Our Readers Write Us

How Albany Solved the Problem of Rural Water Supply

To the Editor:

The article in the June issue of FIRE ENGINEERING by Chief A. Morrison Ennis, "Getting More Water to the Rural Fire," has aroused a great deal of interest in the Albany Fire Department and we heartily agree with him. His recommendations for various types of equipment to combat farm and small-town fires should be given serious consideration. The most serious problem, as he states, is an adequate water supply. Once this has been solved, the type of apparatus to be employed is a relatively easy matter of selection.

It is a tragedy, indeed, to have to watch someone's home or barn burn down after having exhausted the available water on apparatus, when perhaps an additional 500 to 1,000 gallons of water would have put out the fire. One extra tankful often means the difference between extinguishing the fire or watching helplessly as everything goes up in smoke.

Chief Ennis advocates the use of a portable tank and pictures one made in Great Britain. Toward the end of his article he states that American manufacturers could also make and possibly improve upon them. Our department has a 1,000-gallon portable tank manufactured by the Fol-Da-Tank Company. We have used it for almost four years and it has certainly helped solve our problem of providing an adequate supply on the fireground. The tank was secured through the efforts of our former chief, Gene Doyle (now retired), and was one of the first used in southern Wisconsin.

Less than 48 hours after it arrived, we employed it at a barn fire caused by lightning. This was the first time in the history of our department that we had enough water to supply a 2½-inch line at a rural fire. Apparatus responding on mutual aid kept the tank filled, and we estimate about 3,000 or 3,500 gallons was drafted from it. As a result of having plenty of water, we were able to save a large glass silo.

Six weeks later we used it at another barn fire. We dumped water into the portable tank from nearby farm tanks, and after this supply was exhausted, we obtained water from a spring-fed creek about a mile and a half away. One man hauled 3,000 gallons from town in his bulk milk tanker.

A feature of this tank is that we don't have to pump water into it. Being only 30 inches high, it is easy to fill from any type of truck tank. We built an 1,800-gallon tanker specifically for use with it and installed both a 6-inch gate valve and a 2½-inch gate valve at the rear. This permits emptying the tanker in less than two minutes and saves precious time in returning to the water source for reloading, while our pump drafts from the tank. Mutual aid tankers may empty right into the portable reservoir instead of waiting and pumping into the booster tank on our apparatus as was previously done.

The entire assembly knocks down as

Albany Fireman Howard Whitaker (left), Former Chief Gene Doyle and Chief Walter G. Althaus (right), watch tanker being emptied into folding tank by means of 6-inch discharge valve. The unit is said to be equivalent of a second tanker—*Albany Herald photo*

easily as it is set up. It has a spillway which empties the tank in 30 seconds and two men quickly fold it and put it on the truck in a matter of minutes. With the use of this portable tank, we feel that our department now has a second tanker for the price of one, and that we have solved the problem of an adequate water supply for rural fires.

W. G. Althaus, Chief
Albany, Wis., Fire Department

Effect of Wind on Fire

To the Editor:

I have been following the trends and scientific progress in fire fighting as a reader of FIRE ENGINEERING for some time. I have an idea which may be of interest to fire chiefs and may result in improvement in our service.

I believe more fires occur in the Philippines than in other countries. The materials used, mode of building, high temperature of the torrid belt and other factors relating to living habits all contribute to the high fire rate.

Building construction is mostly of wood even in the most congested portions of the cities of this country. Conflagrations occur with frequency and in most cases, wipe out entire commercial and industrial districts. During our last hot season, from January to April of this year, fire caused damage amounting to millions of pesos.

In spite of improvements made in better pumping engines and in the application of water and other extinguishing agents, there is one area where little scientific study has been made. This is the presence of wind and its direction, the main reason for such extensive fires in the Philippines. Wind is sometimes the deciding factor in conflagrations, and depending on its direction and force, may aid fire fighters or prevent control.

Have studies been made of the control or diversion of wind direction to aid fire fighters? This is an area where my co-fire chiefs and other fire fighting organizations who have the facilities, or are more financially able, might experiment.

We have noted how a blast of air can snuff out a fire, such as blowing out birthday candles. If wind or air pressure can either aid or put out a fire, why cannot we create artificial wind and employ it to divert the direction of the prevailing wind?

Anyone who visits an airport may experience the strong blast created by the propellers of a large transport plane. If concentrated and directed toward a raging conflagration, the blast might divert the direction of the existing wind and retard the progress of a conflagration, either by cooling the heat radiation or changing the direction of the convection currents.

Equipment for this purpose, which we shall call "confla" for short, could be a piece of apparatus about the same size as a present pumper unit. It might contain a universally mounted airplane engine to facilitate directional application, with propellers encased to effect a wind tunnel for concentration and directional facility. A water fog nozzle within the

Bringing you the Facts on the latest fire equipment

When your American LaFrance representative calls on you, he brings with him news of the widest selection of fire protection equipment available anywhere. You can rely on his advice, because the unusually wide range of American LaFrance equipment makes it possible for him to recommend *exactly* what you need. Backed by the world famous American LaFrance quality, there is no need for him to overstate performance claims.

Factory trained and field experienced, he represents only one company—American LaFrance. He does more than merely take your orders. He brings facts on new products, and is ready to demonstrate their use. And his interest does not cease when he makes the sale.

His advice has helped and is respected by men in the fire service everywhere. When he next visits you, ask him about some of these new products:

- **ALL-Dacron Hose**
- **Dual-Constant-Gallon Nozzles**
- **Window-Cator Gas Masks**
- **Transistor Sirens**
- **"Mounty" Battery Hand Lamps**

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LIGHTER IN WEIGHT
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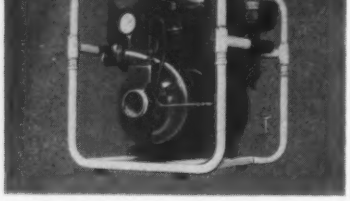


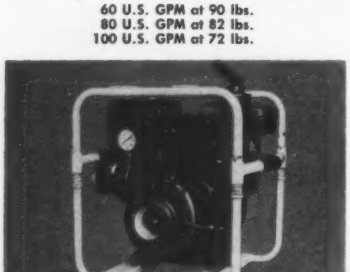
Type FZZ—Packs a *PRESSURE* Punch

2½" Suction and 1½" Discharge

Designed for pumping through a 2½" line over 350 ft. long.

Supplies from draft, on 10 ft. lift:*

60 U.S. GPM at 90 lbs.
80 U.S. GPM at 82 lbs.
100 U.S. GPM at 72 lbs.



Type FZ—Packs a *VOLUME* Punch

3" Suction and 2½" Discharge

Designed for pumping through a 2½" line not over 350 ft. long.

Supplies from draft, on 10 ft. lift:*

85 U.S. GPM at 60 lbs.
150 U.S. GPM at 52 lbs.
300 U.S. GPM at 18 lbs.
*Based on level terrain

New in design, the FZZ and FZ pump bodies and heads are of aluminum for lighter weight. New, efficient check valves and improved Hale ejector-type priming—these are only a few of the new features!

Conveniently portable for two men (now only 148 lbs.), either unit can be mounted or carried on any type of apparatus or truck for fighting fires while in motion from booster tank, or can be used to fight fires direct.

Write today for NEW information and literature; ask for demonstration.

Please send information immediately on your new, improved FZ & FZZ portable fire pumping units. Dept. FE

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tunnel might be incorporated to produce additional cooling effect of the wind to the exposed area.

A few of these units, correctly applied, should do much to stop conflagrations by diverting the wind direction or helping to cool exposed buildings. If these do become possible in the future, I shall be happy to have been of some help in the cause.

Lt. Col. Isidro L. Palacio
Chief, Davao City
Philippines

Liked Sprinkler Article

To the Editor:

Our congratulations on a very comprehensive article which appeared in your August edition under the caption "Modern Fixed Fire Control Systems."

Material of this kind appearing in such a top-notch publication of yours cannot help but accomplish our mutual objective, namely the saving of lives and property from fire.

Raymond J. Casey
Executive Director
National Automatic Sprinkler and Fire Control Association

Dick Vernor

To the Editor:

I was pleased to note your editorial tribute to Dick Vernor in the July issue of FIRE ENGINEERING.

This was a well written and well deserved tribute to one whom we all so highly regarded.

J. B. Davies
Asst. Vice President
Industrial Products Group
Mine Safety Appliance Co.

Residents Protest New Portland Fire Station

Residents in the Alberta Park area of Portland, Ore., have protested the city's plan to locate a new fire station in a corner of the city park.

Their pleas are based on the contention the firehouse would impair full use of the park, disturb church and school activities and be hazardous. Fire officials countered with an explanation that the site was chosen by "scientific formula" and necessary. They discounted the danger element.

The projected new station is one of seven to be erected in 1959 and is part of a $3 million reorganization plan approved by the voters last May. Other improvements include $900,000 worth of new apparatus and equipment and an overhaul of the 30-year-old alarm system.

New Forest Fire Lab

The Department of Agriculture has announced the U. S. Forest Service will build a new laboratory at Missoula, Mont. Its purpose will be to study forest fires and methods of controlling them.

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Obituaries

Retired Chief R. J. Scott

Ralph J. Scott, 74, former chief engineer of the Los Angeles Fire Department died September 17 while on vacation at Williams Lake, British Columbia.

Chief Scott was appointed to head the LA department in 1919 and retired in 1940 after 35 years of service. He was widely known and respected in international fire circles and served as president of the International Association of Fire Chiefs in 1930. He was also a past president of the Pacific Coast Inter-Mountain Division and the California State Fire Chiefs.

Following his retirement he served for a brief time as managing director of the IAFC's educational program. He is survived by his wife and a sister.

Hoboken Captain Killed In Parkway Accident

Captain Martin Smith, drillmaster of the Hoboken, N. J., Fire Department was killed on September 9, when the car in which he was riding with Chief of Department Patrick Carmody and chauffeur Henry Reinhardt blew a tire and overturned on the Garden State Parkway near Toms River, N. J. Smith was thrown from the car and suffered fatal head injuries. Chief Carmody and Reinhardt were treated at a local hospital and later transferred to St. Mary's Hospital in Hoboken.

Smith was appointed to the department on September 15, 1937, and made captain on January 30, 1945. On August 15, 1945, he was named acting chief and served in that capacity until November of that year. In July 1953 he was made drillmaster of the department. □□

NYFD Has New Equipment Policy

As a result of tests which it conducted early this year, the New York Fire Department has changed its policy and is permitting the conditional use of 12-foot soft suctions. Various units throughout the department have or are receiving soft hydrant connections. The tests showed that the small additional discharge obtainable with a hard suction is more than offset by the many advantages in the use of soft hydrant connections.

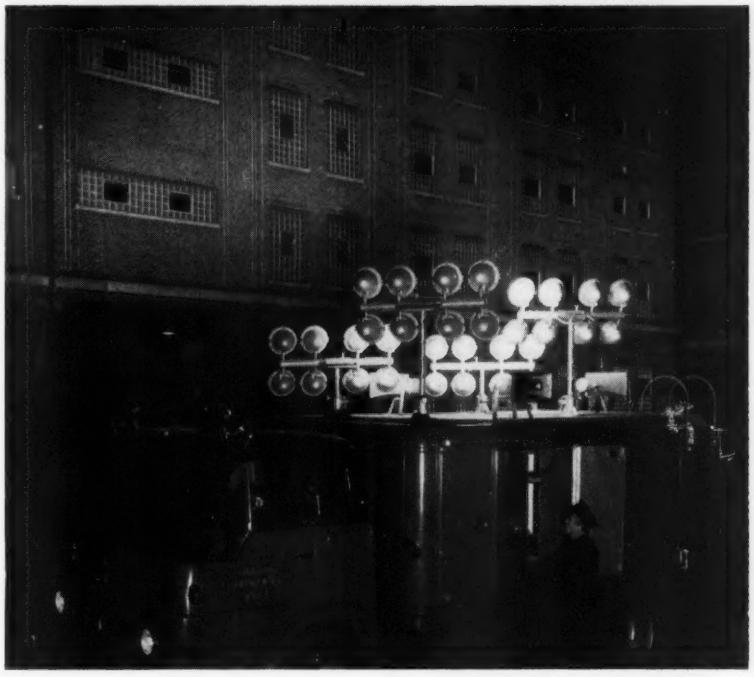
New fog nozzle tips are being issued with new pumpers as well as to other engine companies throughout the New York Fire Department. The tip is 1½-inch FDNY thread. The three positions of the fog tip (straight stream, 30-degree fog and wide pattern of fog) are selected by rotating the tip on its swivel, and are shown by raised (Braille-like) indicators.

Air foam nozzles are also being supplied with the new pumpers as well as to other companies throughout the Department.

Onan ELECTRIC PLANTS

ELECTRIC PLANT NEWS

Onan ELECTRIC PLANTS



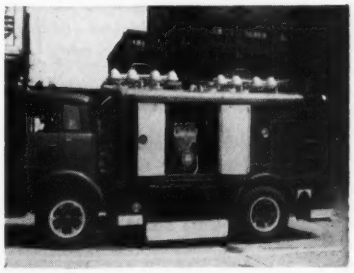
New 1,000,000 candlepower trucks equipped with Onan Electric Plants

25KW Onan units power battery of floodlights for fire fighting; provide current for auxiliary equipment, too

The Chicago fire department recently put three of these new-type lighting apparatus trucks into service, each of which has an assembly of thirty-two 500-watt floodlights. Just one of these trucks can illuminate the whole side of a large building. Floodlights are mounted on a special metal superstructure which can be adjusted to any vertical or horizontal angle. The entire assembly folds flat.

Each truck is equipped with an Onan 25KW plant housed within the truck body. It supplies 16KW for floodlighting with 9 KW in reserve for tools, blowers, other lights and communications.

Onan also builds lightweight electric plants which can be carried right up to the fire site; rig-mounted, quickly-demountable units; mobile electric plants for truck or trailer mounting; and emergency electric plants for standby use.



Onan Model 25EC-4R8 shown through open doors of truck, provides ample power, is easily accessible. Note how lighting superstructure folds flat when not in use. Lamps face down for protection. Truck also carries electric tools, reel of cable and other fire fighting equipment.

A. C. Models: 500 to 200,000 watts; also D. C. and Battery charging units.

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*** Two brilliant red sealed beam bulbs project 90 explosive flashes per minute thru complete 360 degree arc.**

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**** Two "high intensity" WHITE SEALED BEAM BULBS revolve thru 360 degrees . . . one bulb is aimed up into the sky; the other bulb angles down to illuminate the vehicle and ground.**

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At night, the WHITE BEAM creates a stabbing "finger of light" in the sky, which draws attention down to the revolving red flashes.
The red bulbs can be operated independently from the WHITE bulbs, by means of a two-position dash switch.

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the round table

discussion of current fire department and fire management problems

The Use Of Portable Radios

THIS IS THE FINAL installment of the Round Table on the use of portable radio equipment.

Next month's question will be devoted to the use of insignia to denote rank, length of service, branch of service, etc.

Readers are invited to submit comments on next month's subject, as well on the current one. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

The Discussion

Joseph R. Lussier, Chief, Somerset, Mass.: We have two portable radio units which operate on a fire department frequency of 153.95 mcs.

One unit is assigned to the fire department officer-in-command. The other would usually be used by the officer inside the fire building or in the rear of it.

One unit is carried on the first-due engine, and one on the Chief's car. We also have a two-way radio on all pumping engines and ambulance.

We find the portables useful in most normal fires and drill operation. In case of a drowning, or in rescue work, we use them to an advantage from shore to boat, or from boat to our main station. We also use them in our fire prevention and fire inspections.

Albert Talbot, Chief, Quebec, Que.: Nine portable radio units are carried by this department and operate on the fire department frequency.

They are assigned at the central office in the city hall building.

One unit is carried on the chief's car, the assistant chief's car, the rescue wagon, the salvage wagon, the radio technician's car, and the chief mechanic's car; three are carried on the district chiefs' cars.

These units are used for all communications between the central office and fire vehicles.

C. A. Crosier, Chief, Battle Creek, Mich.: We carry four portable units, which operate on a fire department frequency.

They are assigned to chief officers and rescue squad crews and carried on their cars.

They are used for emergency purposes only.

Howard Dey, Chief, New Orleans, La.: We carry ten walkie-talkies, which operate on a fire department frequency.

They are assigned to the district chiefs and carried on their cars.

The units are often used by myself, Chief O'Brien and district chiefs while on tours of inspection in large buildings, also for communication to various units when the department holds various pumping or other type training drills involving several fire units.

F. E. Wood, Chief, Wichita, Kans.: Our department carries ten walkie-talkies, which operate on a fire department frequency.

They are assigned to ranking and commanding officers and carried on chiefs' cars and engine company vehicles.

These units are also used for company and home inspections.

T. William Heidner, Chief, Pasadena, Calif.: We carry 13 portable radio units, which operate on the Pasadena Fire Department frequency only.

They are assigned to chief officers and pumps that do not carry radios and are stationed at hydrants.

Each engine company carries one unit; where there are two pieces of equipment, or more, it is carried on the pump instead of the combination. Three additional sets are carried on the chief officers' cars.

These units are used on all occasions where communications are needed and land lines are unavailable; inspections; mountain details; police assistance; stand-by operations; stake-outs, etc.

Raymond J. Daley, Chief, Chicago, Ill.: We have 100 civilian defense-issued portables which operate by dry battery on their own frequency.

These units are assigned to the chiefs' drivers and personnel and carried on the

THIS MONTH'S QUESTIONS

How many portable radio units (walkie-talkies, pack sets, etc.) do you carry?

Do these units operate on a fire department frequency or do you share a frequency with another service?

To whom are these units assigned at the scene of an emergency?

On what fire department vehicles are the units carried?

Do you use the units in other than emergency operations? If so, please explain.

NEXT MONTH'S QUESTIONS

What insignia is used in your department to denote (a) chief of department; (b) assistant chief (or second in command); (c) deputy (or division chief); (d) battalion (or district) chief?

How is rank, or rating, designated on the uniform coat sleeve (a) by braid (if so, by width and color); (b) by other means?

Does your department use any insignia to denote length of service? If so, what and how worn?

Is wearing of citations (medallions or stripes) permitted? If so, what form do they take and how worn?

Do you believe the fire service should standardize on insignia to denote rank and branch of service?

cars of the battalion division deputy and the fire marshal.

We have used them at fires, parades and inspections. We also use them at demonstrations held in places of large area. We find them difficult to maintain in good order due to battery and adjustment.

Henry G. Thomas, Chief, Hartford, Conn.: We carry six portable units, which operate on the fire department frequency only.

They are assigned to the chief officers and carried on their vehicles.

These units are used for field operations on the fire ground or for any other emergency. We find them to be an important link in our radio communications system.

Every piece of fire apparatus in the department is equipped with two-way radio facilities. We have come to depend on our radio communications for fire protection, both extinguishing and preventive operations, to such a degree that we would be lost without them.

We also have an auxiliary base station as well as spare mobiles. A good preventive maintenance program with 24-hour service and a sound replacement program, we find is essential to the operating efficiency of radio as well as telegraph fire alarm facilities.

John J. Farrell, Battalion Chief, Oakland, Calif.: We carry 32 units, which operate on the fire department frequency.

Chiefs and company officers use walkie-talkies at the scene of emergencies.

The units are carried on all chiefs' cars,

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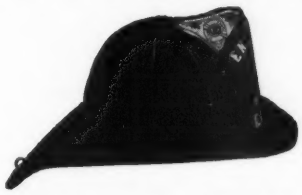

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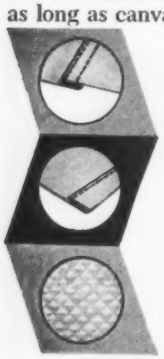

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hill wagons, and most of the truck companies.

They are sometimes used in commercial inspections and at large warehouses or tall buildings. We have encountered some difficulties on commercial inspections due to the machinery noise within the buildings.

Frank S. Sandeman, Dept. of Public Safety, Long Beach, Calif.: We carry eight units including two extra for replacement, repairs, etc., which operate on a fire department frequency.

They are assigned to the chief, deputy chief, assistant chief, and three battalion chiefs and are carried on their cars.

These units are used to communicate from car to car, portable to portable, in the field, portable to car (or vice-versa), and portable to main station (or vice-versa).

They are also used for tests in water systems, oil fields, standpipes, on long hose relays, relaying information to other units whether pumpers, ladder trucks, squads, ambulances, etc. and for aerial ladder use.

All Long Beach Fire Department apparatus is equipped with radio.

Frank Winslow, Assistant Chief, Dubois, Pa.: We have ten portable radios in service, two in each of our five companies. When we started our radio program, there were only two other towns nearby that had radics. At that time, no one else appeared to be interested in having radios installed. We decided to make each one of our fire companies a complete radio unit within itself with one mobile unit and two portable units.

All our radios work on the assigned fire department frequency of 46.14 mc.

At the scene of a fire or other emergency, these units are not assigned to anyone in particular. We have several men in each company that have been instructed in their use. They make themselves available to the officer in charge.

One of these units is carried on the aerial ladder truck while four are carried on pumpers. At the present time, I have one of the portables in my car. This was a big help to us during the grass fire season last spring.

We use these units in our regular training sessions to give our men an opportunity to learn to use and operate them. The fire-police have made good use of them several times for traffic control at fires. □□

Navy Sponsors Conference

The U. S. Navy Bureau of Aeronautics will hold a five-day Fire Protection, Aircraft Fire Fighting and Rescue Conference at the Naval Air Station, Memphis, Tenn., October 27 through 31.

The Bureau of Aeronautics' airlift fire extinguisher, the "TMB" magnesium fire extinguisher, and precautionary measures to be employed in fires involving nuclear weapons, rockets and exotic fuels are but a few of the innovations in which those attending will be instructed both by lectures and demonstrations.

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Persons in the News

National Board Changes

Lewis A. Vincent, general manager, National Board of Fire Underwriters, has announced the retirement, effective October 31, of three veteran members of the National Board. They are:

A. Bruce Bielaski, assistant general manager in charge of the arson department; John A. Neale, chief engineer; and George J. Robinson, senior assistant chief engineer in charge of the eastern territory.

A. Bruce Bielaski

At the same time, Mr. Vincent announced the appointments of Everett W. Fowler as chief engineer and Brendan P. Battle as manager of the arson department.

Mr. Bielaski, former chief of the FBI and a former special assistant to the U. S. Attorney General, has headed the arson detection activities of the NBFU for the past 30 years.

John A. Neale

Mr. Neale, formerly chief engineer of the Tennessee Inspection Bureau, the Chicago Board of Underwriters and the Underwriters' Laboratories, as well as vice president of UL, joined the National Board in 1950. He is past president of

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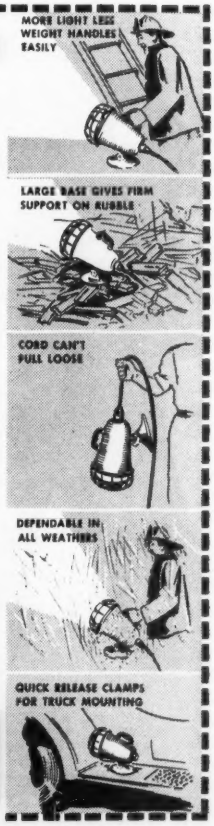
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STANDARD SINCE 1901

GLOBE SUITS

GLOBE MANUFACTURING CO. PITTSFIELD, N.H.

the Society of Fire Protection Engineers and immediate past president of the National Fire Protection Association.

Mr. Robinson, at one time a field inspector for the Factory Insurance Association, joined the National Board in 1927 as a field engineer. He served in both World War I and II as a naval officer.

Mr. Battle, a former FBI agent, joined the NBFU in 1945, and was supervising agent of the arson department for a number of years. More recently he has been assistant manager.

Mr. Fowler joined NBFU in 1928 as an engineer and in 1947 was promoted to assistant chief engineer. In 1952 he was appointed director of the National Board's division of codes and standards.

MSA Research Head Honored

One of industry's outstanding safety awards, the Arthur Williams Medal, was presented to Dr. William P. Yant, director of research and development, Mine Safety Appliances Company, Pittsburgh, on September 17, at the annual award dinner of the American Museum of Safety, held in the Roosevelt Hotel, New York.

The award, given in honor of the late president of the Safety Museum, is for outstanding contribution to the conservation of human life. Dr. Yant, the 18th recipient, was honored for his contributions to industrial and public safety.

Ledford Retires; Merriam Chief at Palo Alto, Calif.

Louis F. Ledford, fire chief of Palo Alto, Calif., retired on August 25th, after almost 32 years of service.

He started his career in the Palo Alto Fire Department in 1927 as a full-time fireman, was promoted to captain in 1930 and became chief in 1941.

He is past president of the California State Fire Chiefs Association, the Northern California Fire Chiefs Association, the Peninsula Fire Chiefs Association and the Fire Division of the League of California Cities. He was a member of the board of directors of the League of California Cities and was a member of the Governor's Fire Advisory Board for Civil Defense.

Assistant Chief Wilson M. Merriam,

Retiring Chief Ledford (right) presents newly appointed Chief Wilson M. Merriam with the traditional white chief's helmet

45, a veteran of 14 years, has been named to succeed Chief Ledford. He was appointed to the fire department on January 1, 1945, was promoted to captain in 1948, was the department training officer, and in 1955 became assistant chief.

Conn. Firemen Elect Burnes

Frank Burnes, of Hartford, was elected president of the Connecticut State Firemen's Association at its 75th annual convention held in Waterbury, Conn., on August 27. Mr. Burnes succeeds William J. Canty of Burrville, who becomes a past president on the executive board.

Other officers named were Howard Reynolds, Eagleville, vice president; John Moehring, Stamford, secretary, and Andrew J. Flanagan, New Haven, treasurer. The Rev. Michael J. Thompson, of Niantic, was renamed chaplain, a post he has held for several years. Prior to joining the priesthood, Father Thompson was a member of the Waterbury Fire Department.

County vice presidents elected were John Boesen, Stamford, Fairfield County; Anthony Rosso, Kensington, Hartford County; Eugene O'Brien, West Haven, New Haven County; Carl Sawyer, Poquonnock Bridge, New London County; James Elliott, Thompson, Windham County; John Gibb, Terryville, Litchfield County; and Delmar Potter, South Coventry, Tolland County.

Tom Magner

Chief Charles Hofman of South Hadley Retires

After 13 years as chief of the South Hadley, Mass., Fire Department, Charles Hoffman retired on September 30. In 1932 he was elected assistant engineer for the fire department and in 1936 was appointed a regular fireman. In February 1945, he was appointed chief.

Chief Hoffman is a member of the Massachusetts Fire Chiefs Club and the Western Massachusetts Forest Warden's Association, of which he is treasurer. □□

Chief Thrown From Pumper

Chief Wilbert Simon, Archibald, Pa., Fire Department, was thrown from the rear step of a pumper on August 4 when the apparatus struck a pot hole. He was taken to the hospital where his injuries were listed as a possible fractured skull, compound fracture of the right leg, lacerations of the scalp and abrasions.

Correction

A typographical error exists on page 782 of the August 1958 issue in the article, "How Con Edison Trains Its Personnel . . .," by William E. Rossnagel. In the table comparing the characteristics of hose lines equipped with open nozzles and fog nozzles, the column heading on the right should read "1½-inch hose with fog nozzle."

Be protected against ALL respiratory emergencies

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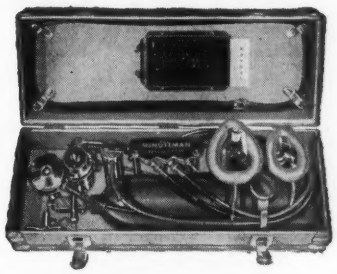
STEPHENSON "MINUTEMAN" RESUSCITATORS



This equipment combines the functions of resuscitator, inhalator and aspirator in one compact (30 lbs. with cylinder) instrument. Therefore, its usefulness is not confined to cases where the patient is still able to breathe fairly well, as is true with the inhalator. In addition, the MINUTEMAN, actually performs the breathing act for the patient in a condition of apnea (partial or complete suspension of respiration).

Once voluntary respiration is substantially restored, the MINUTEMAN operates as an inhalator. If the patient's air passages are clogged with mucus, blood or other foreign matter, they can be quickly cleared with the aspirator. The MINUTEMAN gives excellent results in cases of smoke or fume suffocation, heart attack, electric shock, drowning, etc.

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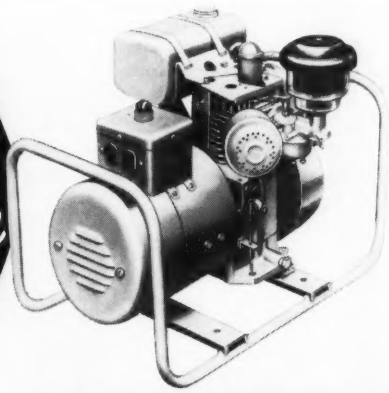

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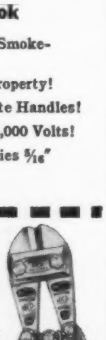

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THE WATCH DESK

overhauling the firemanic news of the day

Extra, Extra-curricular!

Denny Hayes, 8, of Northridge, Calif., loves horses. He has his own pet steed named "Buck" which he rides all over the place.

Denny and Buck nearly came to grief September 3rd when they blocked Southern Pacific Railroad tracks for nearly an hour on a trestle near the boy's home.

Seeking a short cut—or just for the adventure—Denny led his steed out onto the SP trestle. The horse slipped between the ties and plunged up to his shoulders, trapped. Denny, who was uninjured, screamed for help, fearing the arrival of a freight train due at that time.

Firemen who arrived with railroad workers faced a tough task. After setting guards and torpedoes to warn any oncoming trains, the rescuers loosened the plates holding the ties in order to spread them. Then they rigged gear and heaved badly scared Buck out of his predicament by brute strength, while Denny cried.

The expected freight train chugged up on schedule, but was safely stopped in time. Its crew lent a hand to the rescue efforts.

Denny's a very happy boy today; we don't know about Buck. But we'll bet a busted hose gasket to a new pumper that the lad and his steed will steer shy of trestles from now on.

Bee-witched

Fire fighters in two engine companies at Bridgeport, Conn., were given the "bees-ness" on August 27 while attempting to douse a blaze in an abandoned auto.

Engine 12, Truck 12 and Squad 5 went to work on the fire, apparently started by youngsters trying to burn a flock of bees out of the front seat of the auto. Unaware that they were stepping into a "hornet's nest," the men turned on the hose and the bees went to work on them. The firemen didn't call the whole thing a "honey of a time," as Fireman Guy Mangiacara, stung in the left eye, left hand, right hand and right ear, was the most seriously hurt. Mangiacara and five other fire fighters were taken to St. Vincent's hospital for treatment. Next time the firemen in Bridgeport will no doubt "bee" careful if they are in the vicinity of these social, honey-gathering hymenopterous insects.

Tom Magner

Don't Believe in Signs

Our Toledo correspondent sends the news about "sign trouble" in that city recently. Seems the sign at two holes dug by the Ohio Fuel Gas Co. crews read: "Danger area. No smoking. No open flares. No matches."

But nobody had trouble reading the sign the night of September 5. It was lighted by red kerosene lanterns and open pot flares.

Queried "How come?" by reporters, a gas company spokesman explained the flares were put up to light the holes, not the sign. Workers, he said had failed to find the reported gas leak, but the signs were still there. "The men who put out flares don't handle signs," the company excusist said.

Outboard Motor Fire Indoors Kills Youth; Injures Another

Many will have difficulty believing it, but a fire in an outboard motor killed one youth and critically injured another in the basement of a private home in Brooklyn, N. Y. In addition, a patrolman was overcome by smoke.

It was disclosed the two boys, Robert McCombs, 17, and Douglas Braunsworth, 16, had gone to the cellar of the latter's home for the outboard which they intended to use on McCombs' boat at a metropolitan beach.

What caused the fire which damaged the Braunsworth home, was not learned, but neighbors heard the yells of the victims, saw smoke and called the fire department. Patrolman Francis Keenan, who lives nearby and was off duty, ran to help remove the boys from the burning basement.

Pumper Provides Wedding Bells

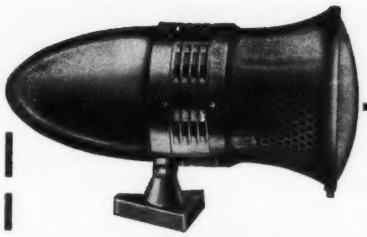
On June 21, Karl Thuge, fire apparatus representative, Eastern Division, Mack Trucks, Inc., married the former Estrid Leibbrandt of Great River, L. I., N. Y.

This was the culmination of the sale of a pumper to the Great River Fire Department. At the time, Mrs. Thuge's father was acting chairman of the board of fire commissioners, and through dealings between the salesman and the commissioner, Karl and Estrid met.

What more fitting climax than for the couple to ride in this same fire engine from the church to their wedding reception.

Hot Off the Tape

Folks of Bloomington, Ind., were somewhat nonplussed by a heading in the local paper reading "Firemen Save Blazing House So It Can Burn." Seems the lads were shortly to do a bit of training-by-doing by showing the local folks how they put out fires by operating on a burning condemned house. Somehow or other the one dwelling left standing for the Brothers was touched off a week ahead of the scheduled demonstration. So there was nothing to do but put out the unscheduled blaze in order to have the bonfire ready for the advertised event. . . . Firemen and police of New Haven, Conn., searched frantically for two hours to find three-year-old Barbara Durant, reported missing August 27, only to locate her sleeping contentedly under a large paper bag in a doll carriage. . . . The 108-year-old brick firehouse at 211 South Memorial Drive, St. Louis, originally the Washington Volunteer Fire Engine House, is to be razed. Building is the third location of the volunteer unit, disbanded in 1857. The city sold the abandoned house in 1836 for $2,200. . . . Half the members of the Adrian, Mich., Fire Department responded August 27 "on the bell." Only, this time, it was a school rather than a fire bell. The remaining members of the department went to classes August 28 as part of a program of professional advancement planned by Fire Chief A. M. Andrews. . . . Fourteen teenagers of Lyons, Colo., went haywire and ran through this country town September 5th, racing their cars, firing guns, smashing bottles in the streets and, of course, turning in false alarms of fire. Four of them were jailed. . . . When fire burned through a floor of a Toronto, Ont., building, a radiator landed on the head of Fire Captain Fred Lusty, but his helmet saved him from injury. What's in a name? . . . For obvious reasons, names, dates and places must be omitted from this tidbit, but it really happened. The crew of a certain firehouse arrived at a dwelling fire with faces red—but not from the wind. They had to coast the last quarter of a mile to the blaze sans power. On the way the pumper began sputtering, then the motor died. A bit of priming and it managed to sputter to the top of the grade, from which point it coasted down to the fire. . . . Orchids to Jackie Cay, 11, and David Roberts, 10, of Lafayette, Ind., who alerted and rescued a mother and her five children from their burning home, August 30. They spotted smoke coming from the burning William J. Hall home. When no one answered the bell or their shouts, the Roberts boy climbed on the second-story roof and entered via a window where he found three youngsters. Meanwhile the other boy broke through a door and discovered two babies. Mrs. Hall heard the commotion on the roof, investigated, then realized the house was afire. She and the Roberts lad dropped the children from the roof to Jackie's mother who had joined the rescue effort. Firemen arrived in time to take the Roberts boy and Mrs. Hall from the roof. □□



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Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

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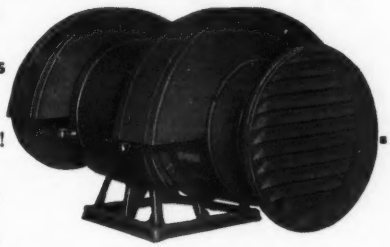

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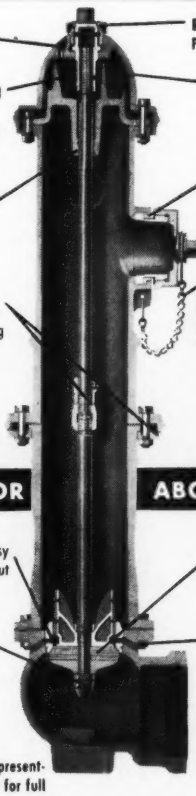

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Automatic lubrication of all threads and bearing surfaces each time hydrant is operated.

Two "O" Ring Seals
Permanent seals without adjustments or binding.

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Prevents permanent traffic damage and permits facing of nozzles, extensions or barrel changes without digging.

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Straight threads permit easy removal from above without digging.

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Prevents ice-locking of operating nut.

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Operating threads and bearing surfaces sealed from water.

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Interlocking lugs plus calking prevent blow-out.

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DESIGNED FOR ABOVE-GROUND MAINTENANCE!

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Closes with the water pressure—and stays closed. Permits repair or modification without water shut-off!

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Automatically force-flushed each time hydrant is opened or closed.

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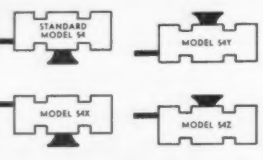

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MANUFACTURERS' NEWS

Continued from page 940

the aluminized fabric used in heat-resistant suits. The bulletins describe the properties of the fabric, tests of its heat reflection, effectiveness of aluminum as a heat control device in protective clothing and the company's heat-reflective face shield material.

Super Vacuum Mfg. Co., Inc., 319½ East 17th Avenue, Denver 3, Colo., has published "Operational Book No. 48." The well-illustrated, 12-page booklet describes the basic operating principles of smoke ejectors in various fire department operations such as ventilation, and gives tips on how to use them most effectively.

Bulletin 351, available from **Federal Sign and Signal Corp.,** 8700 South State Street, Chicago 19, Ill., describes 12 models of Beacon Ray lights. Bulletin 301 depicts the company's Class "Q" sirens.

Three bulletins (0507-1, B-14 and 0105-5) published by **Mine Safety Appliances Company,** 201 N. Braddock Avenue, Pittsburgh 8, Pa., describe respectively canister gas masks, self-generating oxygen breathing apparatus and air or oxygen demand masks.

New Air Force Aluminized Heat-Protective Suit

The U. S. Air Force recently ordered 20,000 new aluminum-coated heat-protective suits for use by its emergency crash crews. The coat and trousers of the new clothing are designed to be worn as "shells" over existing bunker suits.

The fabric consists of a micro-thin coating of aluminum over an asbestos-cotton-glass fiber material and the three-piece suit including hood, weighs about 11 pounds. The hood has an additional

"MORSE"

SHUT-OFF NOZZLE and PLAYPIPE COMBINATION

The World's Finest

Fig. 156

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RUGGED DURABILITY . . . including hat and coat attachments, center emblems and numbers all guaranteed for 10 years against separating from the badge body.

Check the new **STA-BRITE BADGES.** Rich golden colored metal throughout the entire badge body. Easily maintained for a lifetime of sparkling golden brilliancy.

Send for free 32 page catalog containing complete information and illustrating the full line of badges in all finishes.

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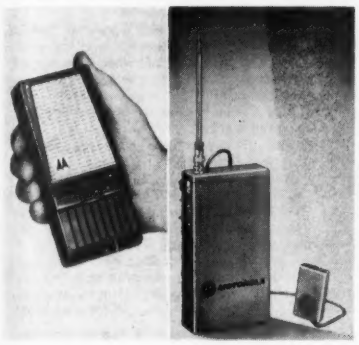
innerlining of wool knitted cloth and a layer of neoprene-coated fiberglass cloth sandwiched between the outer clothing and the inner lining. The face piece is one-quarter-inch thick thermal-setting plastic metallized with either aluminum or gold for added heat reflection.

The suits were designed and tested by Air Force engineers using materials developed by the Minnesota Mining and Manufacturing Co. They are being manufactured by Plaikins, Inc. and Albert Turner and Co., Inc., both New York City firms.

Motorola's New Pocket Radio



Motorola Communications and Industrial Electronics Division, 4501 West Augusta Boulevard, Chicago 51, Ill., announces a fully transistorized "Handi-Talkie" pocket receiver and accompanying pocket transmitter. The receiver operates from 20 to 200 hours depending on type of battery used and weighs 10½ to 12 ounces. The 46-ounce transmitter provides up to 1¼-volt output. Units are available for the 25-54 mc and 144-174 mc bands.

Fire Apparatus Manufacturers Elect Halpin President

Gerald J. Halpin, vice president for sales of American LaFrance, has been elected president of the Fire Apparatus Manufacturers Association, Inc. Mr. Halpin succeeds Richard S. Howe of Anderson, Ind., who becomes chairman of the board of directors. C. H. Welch of the Four Wheel Drive Auto Company was elected vice president, and E. L. Koepenick, secretary-treasurer.

Please turn page

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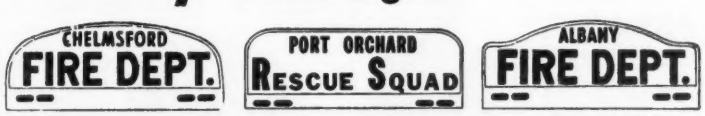
Five distinctive designs



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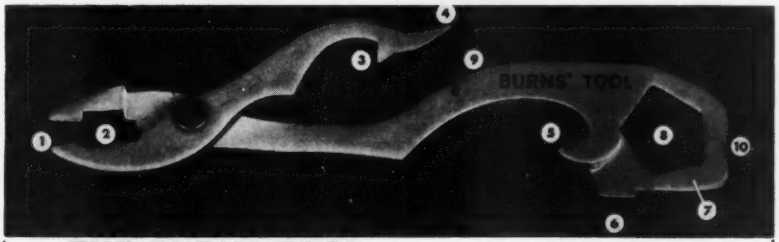

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Now available is one device which takes over the job of many. The BURNS TOOL is specifically designed to enable every fireman to carry on his person the basic "tools of the trade."
Priced at only $6.95, the BURNS TOOL will readily become an asset to any fire department.
Check the features, then for prompt delivery or information write to:

A STURDY MULTI-PURPOSE INSTRUMENT

1. Pliers
2. Gas shutoff
3. Booster spanner wrench
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5. Standard spanner wrench
6. Hammer
7. Pry bar
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9. Clip for holding handles closed
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WATER — WHERE YOU NEED IT!
— WHEN YOU NEED IT!

With the Portable FOL-DA-TANK

This action photo from the Lake Geneva Regional News, Wisconsin, shows the Fol-Da-Tank at work. Water from the tanker is being dumped into the Fol-Da-Tank so that it can return to the nearest water supply for another load thereby assuring a constant supply of water from which to work.

Where the nearest water supply is often miles from the scene of the fire, Fol-Da-Tank acts as a central reservoir from which pumper truck or portable pumps can draft. Readily carried, the Fol-Da-Tank can be set up for use in sixty seconds.

Available in 600 and 1000 gal. sizes. Contact your local equipment supplier or the manufacturer.

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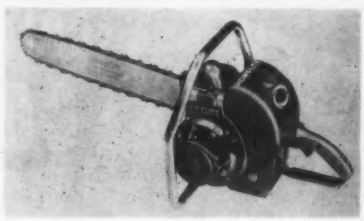
Homelite's New Chain Saw



Homelite, a division of Textron, Inc., Port Chester, N. Y., announces its direct-drive Zip saw complete with 12-inch bar and chain. Described as economical, durable and easy to operate, it has Homelite short-stroke engine design, all-position diaphragm carburetor, automatic clutch and safety chain guard, and large air filter and fuel tank. Blades come in sizes from 12 to 21 inches.

Oxygen Leak Detector

Oxygen Equipment and Service Co., 8335 South Halstead Street, Chicago 20, Ill., is marketing "Oxy-Leak," a liquid leak-testing solution for use in detecting oxygen equipment leaks.

According to the manufacturer, the liquid can be used for any pressure leak application and is entirely free from anything which can combine with oxygen to form a flammable or explosive mixture.

Compact Plant Apparatus

This completely equipped "fire jeep" is maintained at the Waynesboro, Va., plant of General Electric. It is equipped with nine Kidde portable fire extinguishers including dry chemical and carbon dioxide. It also has a 250-gpm power

take-off centrifugal pump and a 75-gallon tank.

The jeep carries hose, clothing, gas masks, portable loud speaker, first aid equipment and emergency tools.

Navy Buys Solar Pumps

The Navy Bureau of Ships has purchased 36 Mars gas turbine-powered pumps from Solar Aircraft Company, 2200 Pacific Highway, San Diego 12, Calif., for nuclear wash down, it was disclosed by France Q. Wilson, manager of turbine and control sales.

The pumps, powered by the 50-hp Mars turbine engine, are being used by the Navy to study the effectiveness of

FYREPEL FIRE FIGHTING EQUIPMENT SHOWN FIREMAN AND CITY OFFICIALS

Newark, Ohio, May 1958, Fyrepel Products, Inc., Newark, Ohio, recently demonstrated their fire fighting equipment at a drill conducted by the local fire department. A house marked for wrecking to make way for new expressway was set afire and the latest fire fighting techniques were employed for the benefit of the department and city officials.

Fyrepel Engineers and sales personnel donned aluminized entry and proximity suits to prove claims of their equipment. Firemen, themselves, then took turns using the clothing and were amazed at the comfort and maneuverability—actually entering a room completely engulfed in flames in a simulated rescue operation. Fire Chief, H. C. Hannum and officials were so impressed that several suits were ordered immediately.

Many tests, similar to this have been conducted throughout the U. S. by Fyrepel personnel. Al Larimer, Fyrepel Sales Manager states that these tests result in sales. "What we claim for this equipment is hard to believe. That's why I, myself, put the clothing to the most severe tests imaginable. All doubts are then removed from the firefighters' minds and their enthusiasm for the suits after using them is a sure sales pitch for Fyrepel."

FOR COMPLETE INFORMATION, WRITE:

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washing down ships with water as protection against nuclear contamination.

Mars turbine engines are already in use by the Navy for operating portable fire pumps and for other emergency shipboard applications.

Hahn Motors Reorganized

Hahn Motors, Inc., 400-460 South Third Street, Hamburg, Pa., has announced a reorganization of the company. It now offers a full line of pumpers, tankers, crash and foam apparatus and rescue and squad units as well as ladder trucks, including aerials from 50 to 200 feet on straight chassis.

Appointments and Promotions

William S. Murray, Jr., has been named director of sales, Fire Hose Division, Goodall Rubber Co., with headquarters in Trenton, N. J. He is a member of the NFPA Hose Committee, and formerly was a special representative of the company.

Graflex, Inc., Rochester, N. Y., a subsidiary of General Precision Equipment Corporation, has announced the appointment of three district managers.

Maurice Mykietyn will supervise the territory of New Jersey, northern New York and part of Connecticut and will maintain headquarters in Clifton, N. J. **Vernon J. Stopke** has been named district manager for Minnesota and Wisconsin, with headquarters in Minneapolis, and **Francis Laton** becomes district manager for North and South Carolina with headquarters in Charlotte, N. C. The latter will be affiliated with National Photographic Products Division, National Theatre Supply Co., a G. P. E. subsidiary.

G. F. DeCoursin, formerly vice president-sales, has been named vice president-marketing of a new marketing division organized by Four Wheel Drive

Auto Co., Clintonville, Wis. In his new position, DeCoursin will be in charge of product origination and development, as well as sales.

Doerr Brothers, Inc., Pittsburgh, Pa., will handle distribution of S & S ambulances in western Pennsylvania and northern West Virginia, and **Gustave B. Glasrud** of Stillwater, Minn., will handle their distribution in Minnesota, Iowa, Nebraska, North Dakota and South Dakota.

THE "QUICK HITCH" RIGID DEE-RING and SNAP have long been associated with Janesville coats. The detachable lining, custom built sleeve and coat length, and rugged construction using the finest materials have kept Janesville first!

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Bids will be accepted up to noon, November 17, 1958, in the Office of First Selectman, Town of Westport, Conn., for a 1929 Am. LaFrance 6 cyl. pumper in good running condition. Rotary gear pump. Last test, pumped in excess of 500 G.P.M. Fully equipped. Right reserved to reject any or all bids.

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1—1941 Seagrave, 750 G.P.M. pumper 400 gal. Booster tank, 8 cyl. Motor, 2—6 Volt Batteries, Dual ignition, 6—900 x 20 Mud grip tires, very low mileage, repainted June 16, 1958. Location Chicago. Price $1650.00.

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Unused 400 pound double jacket hose built to Government specifications.

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NEED a siren or red light? Consult my low prices on TOP QUALITY USED SIRENS AND BEACON RAY LIGHTS. Trade-ins accepted.

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One (1) 1941 Type 190 American LaFrance 65-ft. Aerial Ladder Truck with 100 GPM booster pump, 150 gallon water tank, 208 ft. of ground ladders and all standard equipment. Truck is now in service and in excellent condition. Contact: John A. Marshall.

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1943 G.M.C. 2000 gallon Tanker with 500 G.P.M. Front-mounted Pump — Siren — Lights — Reinforced Frame. Priced for quick sale.

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Special Discount on Large Orders
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HOBBY MATS
BOX 145 DEPT. F BALSAM LAKE, WISC.

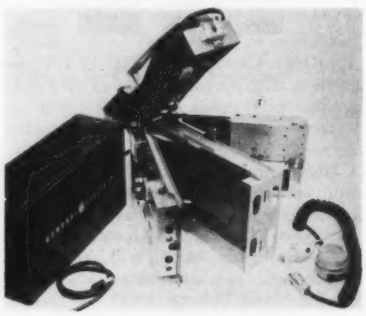
The appointments were announced by Charles A. Eisenhardt, Jr., vice president in charge of sales for Hess & Eisenhardt Company of Cincinnati, manufacturers of the S & S line.

The executive committee of Bell & Gossett Company announces that **S. R. Schleicher** has been made general manager of its Marlow Pumps Division, Midland Park, N. J.

Brewster Fire Equipment Company, Brewster, N. Y., and **Perri Pontiac Company,** Carbondale, Pa., have been appointed fire apparatus dealers by Four Wheel Drive Auto Co., Clintonville, Wis. Brewster will represent FWD in four New York State Counties: Westchester, Putnam, Dutchess and Rockland. Perri will sell in Lackawanna County, Pa.

New G-E Chassis Design

Fan-type design is said to make servicing easy in General Electric Company's new portable two-way radio. The unit contains an all-transistor receiver engineered to be compact yet easily maintained. Unique design is claimed to be the first of its type in the communications industry.



Battery-Mounted Hand Lamp

The "Mounty," a battery-mounted hand lamp, newest in the Big Beam line, has been announced by U-C-Lite Mfg. Co., 1050 West Hubbard Street, Chicago 22, Ill. It comes in two models: Model 664, with a sealed beam bulb and two-position red flasher, and 666 with sealed beam white light only. Both are rated at 40,000 candlepower. Heads are of heavy-gauge chrome-plated steel and mount easily with two finger grip nuts which screw on battery terminals. They will fit any standard 6-volt, twin-pack, self-contained battery case, it is claimed.

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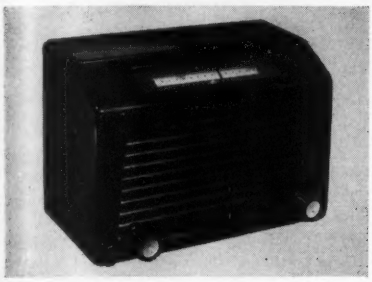

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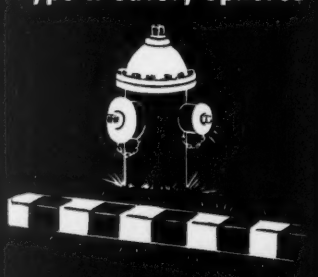

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FIRE COLLEGES

Aircraft Fire Fighting and Rescue Conference—Oct. 27-31, U. S. Naval Air Station, Memphis, Tenn. Conference restricted to fire chiefs at Naval air stations or their military counterparts, and to Marine Corps crash crews and fire chiefs. For further information, contact C. J. Odend'hal, Jr., Bureau of Aeronautics, Department of the Navy, Washington 25, D. C.

Fire Fighting Seminar—Oct. 24-25, Huntington, W. Va. For information, contact Captain R. M. Myers, Station 5, Huntington Fire Department, Huntington, W. Va.

Kansas State Fire School—Oct. 20-23, University of Kansas, Lawrence, Director, Clyde A. Babb, 111 Fraser Hall, University of Kansas, Lawrence, Kansas.

Michigan Industrial Fire Control Seminar—Nov. 10-11, University of Michigan, Ann Arbor, Mich. For information contact Francis Hartman, Supervisor, Firemanship Training Program, 1610 Washington Avenue, Ann Arbor.

Morris County, N. J., Fire School—November 11—Mill Brook Fire Headquarters, Randolph Township; December 2, Madison Fire Headquarters, Madison. For information write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

Ontario Fire College—Oct. 20-24—Fire Forum for County Fire Coordinators. All courses to be held at Ontario Fire College, Gravenhurst, Muskoka, Ont. For information, contact D. E. Barrett, Director.

U. S. Atomic Energy Seminar—October 23, New Haven Fire Fighters Training School, New Haven, Conn. Seminar limited to fire and police instructors of New Jersey, New York and the New England states who have previously attended the Commission's three-day course on "Radioactive Hazards in Industry." For information, contact Francis L. Brannigan, U. S. Atomic Energy Commission, Washington, D. C.

1959

Fire Department Instructors Conference—Feb. 24-27, Memphis, Tenn. For information contact Emmett Cox, Western Actuarial Bureau, P. O. Box 1089, Chicago 90, Ill. □□

Coming Events

Oct. 19-21—**Temiskaming Firemen's Association.** Annual meeting, Haileybury, Ont. Secretary-Treasurer, T. H. Whitman, P. O. Box 331, Normanda, Que.

Oct. 21-23—**Illinois Firemen's Association.** Annual meeting, Joliet, Ill. Secretary, Roy W. Alsip, Champaign, Ill.

Nov. 6-8—**Washington Fire Commissioners Association.** Annual meeting, Bellingham, Wash. For information contact Fred Dustin, 2195 Mt. Baker Highway, Bellingham, Wash.

Nov. 13-15—**International Rescue and First Aid Association.** Annual meeting, Jacksonville, Fla. Executive Director, Max L. Spray, 101 North Alfred Street, Alexandria, Va.

Nov. 17-19—**National Fire Protection Association.** Fall conference, Pittsburgh, Pa. General Manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

1959

Aug. 30-Sept. 4—**International Association of Fire Chiefs.** Annual meeting, Grand Rapids, Mich. Secretary-Manager, B. Richter Townsend, 232 Madison Avenue, New York 16, N. Y. □□

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- Nylon ball bearing swivel connections assure easy operation of the turret which revolves 360°.
- Eight inch diameter hand wheel with 3″ revolving handle, worm gear operated, directs stream up or down through an elevation of 90°.
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ADVERTISING INDEX

FIRE ENGINEERING

OCTOBER, 1958

	Page
Akron Brass Mfg. Co., Inc.	942–943
American District Telegraph Co.	908
American Fire Apparatus Co.	912
American LaFrance Corp.	959
American Rubber Mfg. Co.	896
Antrex Corp.	944
Ardmore Products	905
Atlas Safety Equipment Co., Inc.	973
Bean Div., John; Food Machinery & Chemical Corp.	894–895
Bi-Lateral Fire Hose Co.	951
Blackinton & Co., Inc., V. H.	952
Boardman Co.	900
Body-Guard Mfg. Co.	970
Boston Woven Hose & Rubber Co.	950
Braxmar Co., Inc., C. G.	954
Burns Tool Co.	971
Cairns & Bro., Inc.	963
Champion Sprayer Co.	922
Circul-Air Corp.	949
Coin Savers	971
Cornelius Co.	946
Delehanty Correspondence School	975
Duo-Safety Ladder Corp.	903
DuPont de Nemours & Co., E. I.	916
Eagle Signal Corp.	899
Elkhart Brass Mfg. Co., Inc.	976
Eureka Fire Hose; Div. of U. S. Rubber Co.	939
Everson-Ross	972
Fabric Fire Hose Co.	891
Fairbanks, Morse & Co.	956
Federal Sign & Signal Corp.	889
Flex-O-Lite Corp.	975
Fol-Da-Tank Co.	972
Fyrepel Products Inc.	972
Fyr-Fyter Co.	901
Gamewell Co.	923
Globe Mfg. Co.	964
Goodall Rubber Co.	910
Goodrich Industrial Products Co., B. F.	893
Greenburg's Sons, M.	946
Hale Fire Pump Co.	960; 965
Halprin Supply Co.	954
Handford Brown Co.	964
Hannay & Son, Inc., Clifford B.	941
Harron Labs	975
Hewitt-Robins	945
Hoosier Tarpaulin & Canvas Goods Co., Inc.	964
Howe Fire Apparatus Co.	911
Industrial Radio Corp.	944
Janesville Apparel Co.	973
Kelco Supply Co.	907
Leece-Neville Co.	919
McIntire Brass Works, F. N.	970
Macchi & Co.	956
Mack Fire Apparatus	909
Maxim Motor Co.	Inside Front Cover
Memco Aerial Ladder Co.	966
Midwestern Safety Mfg. Co.	904
Mine Safety Appliances Co.	897
Minnesota Mining & Mfg. Co.	912
Morning Pride Mfg. Co.	975
Motorola Communications & Electronics, Inc.	892
Mountain States Equipment Co.	952
Mueller Co.	969
Natale Machine & Tool Co.	965
National Foam System, Inc.	910
Nielson Rionda, Inc.	972
Oberdorfer Foundries, Inc.	953
Onan & Sons, Inc., D. W.	960
Oxygen Equipment & Service Co.	958
Pacific Reflex Signs	972
Parco Products Co.	972
Pioneer Gen-E-Motor Corp.	960
Pirsch & Sons Co., Peter	Inside Back Cover
Porter Inc., H. K.	960
Potter-Horn, Inc.	972
Powhatan Brass & Iron Works	910
Radio Corporation of America	917
Rockwood Sprinkler Co.	915
Russell Uniform Co.	972
Scott Aviation Corp.	947
Sireno Co., Inc.	960
Smith & Co., D. B.	Back Cover
Stephenson Corp.	967
Sterling Fire Alarm Co., Inc.	969
Super Vacuum Mfg. Co., Inc.	957
W-B Manufacturing Co.	955
Washington Products Co.	960
Waterous Company	901
Waukesha Motor Co.	898

NG

RING

3

Page

942–943
908
913
959
896
948
905
973

894–895
951
953
906
979
903
958
971
960
983
949
971
948
975
903
916
899
976
939
973
891
956
889
975
972
975
909
928
966
914
893
946
960; 965
954
964
941
975
945
964
911
944
973
907
919
970
956
909
Front Cover
966
904
897
913
975
892
953
969
965
918
975
956
962
958
973
975
962
Back Cover
966
979
918
917
913
973
947
962
Back Cover
967
969
957
955
968
903
894

EERING

PAGE

E(S) MISSING